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TABLE OF CONTENTS ON LAST PAGE OF READING.

MORE RECLAIMED RUBBER?

IT has been seriously suggested that reclaimed rubber be used to make good the shortage in crude rubber in all goods manufactured in the United States. As the suggestion was made wholly as a conservation measure, it merits serious consideration.

Turning to the market for a comparison of values, there is found an average of 17 cents per pound for common grades of reclaimed rubber, and of 56 cents per pound for plantation sorts. This would apparently end all argument. Not justly, however, for the question of compounding has not been considered. Plantation rubber may be and often is compounded down to 17 cents per pound. The reclaimer urges that his 17-cent stock is as good or better, with the following additional advantages: it needs no washing, drying, or milling, and demands no overseas cargo space.

It is claimed, also, with the amount of scrap in sight, particularly tires and tubes, that there is plenty of raw material. Moreover, the mill capacity of the reclaiming plants, some 44 in number, is sufficient, if operated day and night, to fill all requirements.

It should be remembered, however, that the excellence of reclaimed rubber is maintained by the continual additions of crude rubber upon which existing compounds are based. If the proportion is lowered the re-reclaiming of scrap would result in a progressive lowering of values, both in the reclaimed product and in the finished goods. This was definitely established in the English attempts in "reformed rubber goods," which were undertaken on a large scale by numerous companies. While in the laboratory, experiments were successful, on a commercial scale they were a failure. The report that the reclaiming over and over again of rubber scrap in Germany without the usual additions of crude rubber in the compounds in the last four years, has practically destroyed all of the original scrap rubber, is also worth considering.

There is a further possibility that reclaimed rubber thus used would be treated by the powers that be like crude rubber. This would entail an absolute standardization of grades. This in turn would involve a pooling of all special information, and the acceptance of standardized processes. Moreover, price-fixing to prevent speculation either in scrap or in the finished product would be inevitable. And finally, as the use of reclaim instead of crude rubber would in no way conserve many materials, such as tire fabrics, allocation would be a necessity.

Manufacturers of rubber goods are divided on the question of such substitution. They all recognize the great value of reclaim, and while there are many high grades on the market to-day, certain manufacturers of rubber goods, rubber thread for example, will not use any of them. Nor would makers of gas masks agree for one moment to any change of compound.

There is also the uncertainty as to world developments that gives both rubber goods manufacturers and reclaimers pause. Continuance of the war involves the possibility of industrial coordination among the Allies that would affect the whole question of crude rubber, reclaimed rubber, and manufactured goods. Just as a central control is now in existence in the Army, Navy, and Food Administration, so it may be extended over things industrial. Such an international control might find it best to stimulate plantation production, and to use reclaimed rubber only locally and for certain types of goods. It would certainly insist upon restrictions unheard of at present. In all probability there would be a standardization of rubber goods compounds and the elimination of private formulae. Crude rubber would be shipped to the nearest manufacturing centers and goods would be manufactured in localities nearest their markets, whether in England, France, Italy, Japan or the United States. It is even possible that the use of many bulky materials would be forbidden, to save cargo space and freights, and to conserve larger percentages of rubber.

As the matter stands, the trade could certainly use more reclaimed rubber, and manufacturers may be

trusted to do that wisely.

Returning to the suggestion itself, it is a striking indication of the great present importance of the American reclaiming industry. So great has it grown, so vital has it become, that it almost challenges the supremacy of crude rubber. Verily, the day when it was used in secret, and termed "shoddy" has been magnificently outlived.

IN BEHALF OF THE LITTLE FELLOW.

THE small-tire manufacturers presented their case wisely and well at the luncheon of the War Service Committee of the Rubber Industry. Their attitude of patriotism, frankness and cooperation—not forgetting the confidence they expressed in the War Service Committee—does them great credit. To a man they offered to turn their plants over to the Government wholly or in part, or to do anything in reason required of them in order to continue in business. Their specific requests were only that a basis of crude rubber allocation be adopted which would assure them sufficient raw material to cover the overhead expenses of operation, or that Government contracts be pooled among them to tide over the period of tire curtailment. Their chief concern was to protect their employes and shareholders, and their criticism was constructive, not whimpering.

Two months of the present basis of allocation and curtailment will by no means put all of the many flourishing young companies which have sprung up within the past year or two entirely out of business, but any considerable extension of the arrangement is likely to have no other result.

NON-ESSENTIAL RUBBER GOODS.

TIME was when rubber in any form was wholly non-essential, when the human race from infancy to old age knew it not and missed it not at all. Even to-day, were there no war, it is a question as to what goods would be luxuries and what necessities. But in the waging of war by a great nation, not only the machinery for fighting and the men who fight, but the civilian host that feeds, clothes and furnishes the sinews to Army and Navy, require rubber in hundreds of forms.

Its many uses in airplanes, balloons, gas masks and tires, are among the spectacular and most often described in the public prints. Not so well-known are the medical and surgical sundries, waterproof clothing and footwear, insulation of both hard and soft rubber, and a thousand and one lesser but important uses.

The present-day view includes the machinery of production at home, which, to function perfectly, depends upon the use of almost the same rubber goods used at the front, and indeed demands a greater variety. Steam engine packings are a necessity here at home, but not on the firing line. Crutch tips are an essential for the wounded but chair tips are a luxury.

The list of non-essential rubber goods prepared by the War Service Committee which appears in another column, covers very thoroughly the goods now on the market. It is most timely and will not only save labor and material, but for the time being check expansion and inventive effort along certain lines. Most of the goods are but a portion of the product of rubber factories large and small. Five companies, however, will doubtless seek other work. Two of them make mats and matting only; two, toy balloons, and one, rubber sponges. Not that they need to stop manufacturing their goods if in any way these fit into war work. The equipment for making bath sponges, for example, is just right for sponge rubber in gas masks. It is recalled also that toy balloons have been sent over the German lines carrying propaganda.

Perhaps, after all, many non-essentials may be transformed into essentials.

KEEPING TABS ON AMERICAN SHIPPING AND POSTING submarines on sailings is the work of many seaport spies in the United States. One easy source of information has been the printed lists of arrivals and departures of vessels heretofore a regular feature of the newspaper and technical press. The Secretary of the Navy has therefore ruled that such data be omitted. Very gladly this journal complies with the request and hereafter rubber arrivals will appear minus ship's name and dates. We trust thus to give rage and discomfort to the enemy.

THE ALERTNESS OF THE BUREAU OF FOREIGN AND Domestic Commerce in protecting American interests is reflected in a recent happening. An agent of the bureau in Argentina sent to Washington a print of a tire tread registered by one not an American. A print of it sent to THE INDIA RUBBER WORLD showed that it was almost a duplicate of a well-known design owned and used by The Fisk Rubber Co. and registered in Argentina in 1916.

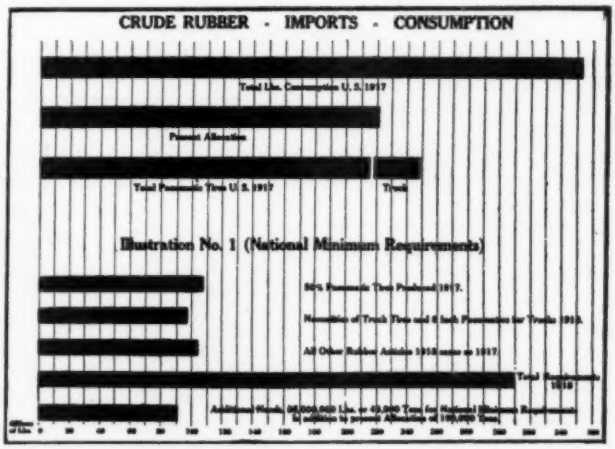
THAT RECLAIMERS ARE ALERT IN THEIR EXAMINATION of new processes is shown by their invitation to Dr. L. E. Weber to lecture to them on the use of nitre cake as a substitute for sulphuric acid. Those who have experimented with the cake so far report only indifferent results, however.

THERE LOOMS THE POSSIBILITY OF GAS MASKS FOR sailors, coast guards, and mayhap seashore residents. Dependent, of course, upon the ability of the Hun to gas the sea. What with masks for the Army, Navy, and civilians, not to speak of similar equipment for horses, mules and dogs, mask making is becoming a big factor in rubber manufacture.

Pneumatic Tire Production Curtailed.

Crude Rubber Restrictions Extended Sixty Days—Allocations Reduced to 3/8 of 1/6 of the 1917 Consumption to Meet Heavier Government Requirements and Provide for New Manufacturers—Pneumatic Tire Production to Be Curtailed to 50 Per Cent of the Production for August and September, 1917—Recommendations of the War Service Committee to Meet the Existing Situation—500 Rubber Men Meet at War Service Committee Luncheon to Discuss the Suggestions.

AT the suggestion of George N. Peck, Commissioner of Finished Products of the War Industries Board, the War Service Committee of the Rubber Industry of the U. S. A., on July 22 submitted a memorandum to the War Industries Board reviewing the existing situation and making recommendations for meeting the problem of conserving crude material, shipping space, manufacturing facilities and labor, and of controlling and reducing the consumption of the finished product in order to assure an adequate supply of crude rubber for the manufacture of articles necessary for the prosecution of the war despite any temporary interruption of ocean traffic, and not forgetting the public good and national prosperity. The committee expressed the desire of the rubber industry as a whole to cooperate with the Government to the fullest extent and stated that its guiding principle would be: "Government, first; industry, second."


CRUDE RUBBER - IMPORTS - CONSUMPTION
Total Pneumatic Tires U. S. 1917
Trucks
Illustration No. 1 (National Minimum Requirements)

It was shown that operation of the import restrictions in force during the months of May, June, and July indicated conclusively that a prolonged continuation of the same restrictions would bring about a serious situation and handicap the Government in securing necessary supplies. Either there must be an extremely radical reduction in production or an increase in the importation of crude rubber—or both.

Under the new method of packing, only 2.7 per cent of the Pacific Coast shipping tonnage would be required to import the greater part of the plantation rubber coming from the Far East.

The following classified table showing the amount of rubber used in 1917 in the production of various classes of goods, as compiled from 448 replies to 503 questionnaires to the trade, was presented to show that whereas about 160,000 tons was consumed, the government allowance was only 100,000 tons:

Tires and Tubes. Class.	Tons used during calendar year ended December 31, 1917.
Automobile pneumatic casings	71,664
Automobile pneumatic tubes	14,422
Motor and bicycle tires and tire sundries	2,815
Solid tires	11,685
Casings and tubes combined	8,782
Casings, tires and tubes combined	902
Mechanical rubber goods	21,323
Boots and shoes	12,688
Insulated wire and insulating compounds	2,756
Druggists' and stationers' sundries and surgical rubber goods	3,732
Waterproof clothing, including carriage cloth and rubber sheeting	1,590
Waterproof clothing, including single and double texture	585
Hard rubber goods	1,165
Rubber cement	1,462
Miscellaneous, not included in any of the above schedules	1,798
Total	157,369

The following explanatory memoranda were appended:

MEMORANDA REGARDING PRODUCTS OF THE RUBBER INDUSTRY.

Manner in which they contribute to the maintenance of the military establishment or to the maintenance of the national interests in the present emergency.

TIRES AND TUBES.

Tires, both pneumatic and solid, and tubes for the pneumatic tires are essential for government uses and for transportation connected with essential industries; of course they are less necessary for strictly passenger.

MECHANICAL RUBBER GOODS.

BELTING. Used for transmission of power and for conveying materials. Essential to all mines, munition plants, and practically every other kind of essential industry. Increased use of rubber belting will tend to conserve the limited supply of leather for military purposes.

HOSE. Fire hose, for the protection of life and property and the conservation of the nation's industrial resources. Hose used in industry for air-brakes, air-signals, air-drills, dredging, diving, conveying acids, irrigating, blowing out boiler flues, flushing, etc. Garden hose, used to increase the nation's agricultural crops. Virtually every kind of essential industry demands hose of some sort in its manufacturing processes or as protection against loss by fire.

PACKINGS. Absolutely essential for locomotives, stationary steam engines, power plants and pumps.

TAPE. Used in insulating wire for the transmission of electrical power and light. Essential to practically every industry.

TUBING. Used in balloons, trench helmets, gas masks, industrial plants, oxycetylyne welding, and insulation.

JAR RINGS. Essential in conserving the supply of fruits, vegetables and other food products.

RUBBER THREAD. Essential in bandages and other surgical supplies, airplanes, and clothing.

FIBER AND RUBBER SOLES AND HEELS. Contribute largely to the conservation of leather for military purposes.

MATS, MATTING, AND TILING. Used largely as flooring in railroad cars, power plants, and public buildings, where no other kind of floor covering is adequate.

MOLDED SPECIALTIES AND MISCELLANEOUS. Embrace a wide variety of items, most of which are for industrial and military purposes. For example: plumbers' specialties (essential to sanitation and hygiene), acid gloves and aprons, gas masks, cements and various kinds of shock absorbers used in manufacturing and transportation industries.

BOOTS AND SHOES.

ESSENTIAL IN MILITARY OPERATIONS. Millions of pairs required by the Army and Navy.

ESSENTIAL IN INDUSTRY. Necessary in lumbering, mining, powder plants, fishing, farming, electrical industries, and hundreds of industrial activities involving outdoor labor.

ESSENTIAL TO THE PROTECTION OF HEALTH. Worn by children, women, and men as a protection against exposure and disease.

CONSERVE THE SUPPLY OF LEATHER. Shoes with rubber soles and canvas uppers serve largely as a substitute for leather footwear, thereby conserving the supply of leather for military purposes; they provide low price footwear for the masses, and contribute to safety and health.

INSULATED WIRE AND INSULATED COMPOUNDS. Essential to the transmission of electrical power and light. An absolute necessity to practically every ship, industrial plant, transportation system, as well as to public buildings and private homes. Protects life, property, and industrial resources.

DRUGGISTS' AND STATIONERS' SUNDRIES AND SURGICAL RUBBER GOODS.

DRUGGISTS' SUNDRIES AND SURGICAL RUBBER GOODS. Essential to the preservation of health and life. Among the chief items are surgeons' gloves and aprons, pads, pillows, bed pans, syringes, hot-water bottles, ice bags, life preservers, sheetings, milk-bottle nipples, and bandages.

STATIONERS' SUNDRIES. Chiefly erasers and elastic bands. Used in thousands of commercial activities and in educational institutions.

HARD RUBBER GOODS. Used chiefly in the manufacture of electrical battery jars, battery jar appliances, and insulating parts for various kinds of electrical equipment. Essential to submarines, motor trucks, gunfire-control batteries, and a wide range of industrial plants and processes.

Coincident with the decreased supply of crude rubber permitted, it was pointed out that the demand for such essential articles as footwear and surgical articles was very substantial, and that the demand for truck tires, essential to war activity and transportation, had increased four-fold; in 1917 the production of pneumatic tires had required about 65 per cent of the total importation of crude rubber.

The following general working classification of the industry in the order of approximate importance (it always being assumed that government orders take precedence) was submitted:

(a) Medical rubber goods.
(b) Rubber footwear.
(c) Waterproof clothing.
(d) Solid tires and pneumatic tires for commercial use.
(e) Mechanical rubber goods for the operation of industry.
(f) Insulated wire.
(g) Pneumatic tires for essential passenger use.
(h) Bicycle tires.
(i) Hard rubber goods other than medical.
(j) Mechanical rubber goods for less essential use.
(k) Rubber cement.
(l) Pneumatic tires for pleasure use.

To meet the existing situation six recommendations were made to the War Industries Board.

1.—DECREASED PRODUCTION OF CERTAIN ARTICLES.

It was suggested that the production of the following articles might be eliminated or reduced during August and September in order to conserve rubber to some extent and labor and manufacturing facilities to a greater extent.

Bathing caps	Glass mats
Mats and matting (except for insulation purposes)	Pitcher mats
	Poker chips
Chair tips	Umbrella rings
Tobacco pouches	Toy balloons
Bath mats	Flowers
Bath mitts	Bathing garments
Bath pillows	Advertising specialties
Beard softeners	Telephone ear pads
Beauty brushes	Cuspidors
Carriage mats	Goggles
Auto mats	Atomizers for perfumery
Change mats	Bust forms
Cuspidor mats	Camera bulbs
Door mats	Chin bands
Drainboard mats	Cigar holders
Flower-pot mats	Cigarette holders
Rubber toilet sponges	Complexion bulbs
Toys	Household gloves
Rubber bands	Tires for horse-drawn vehicles

2.—MOTOR-VEHICLE STATISTICS.

A Federal licensing plan according to details carefully worked out was advocated in order to obtain an accurate knowledge as to the uses of motor-driven vehicles and the number employed in each class with which to formulate any regulations that may be adopted toward controlling such uses. The plan called for classification into seven divisions, according to type of vehicle and use, each to bear a distinctive license tag for which a fee of $1 or $2 would be charged.

3.—REDUCTION OF PNEUMATIC TIRE PRODUCTION.

As a measure of immediate relief, pending the compilation of data through the Federal licensing plan, it was suggested that the War Trade Board might order each manufacturer for the months of August and September to reduce his production of pneumatic casings and tubes therefor up to six-inch sizes to one-twelfth of his 1917 production in amount of crude rubber used and number of such articles manufactured. In this connection it was pointed out that the unnecessary use of motor-driven vehicles could not equitably be controlled by a restriction upon the importation of rubber.

4.—NOTICE OF RESTRICTIONS.

It was asserted that the restriction of production of pneumatic casings and tubes for limited periods would induce unwarranted buying and hoarding before the restrictions became effective unless notice of the restriction was accompanied by an announcement of the proposed possible restriction of use under Federal control or license.

5.—TENTATIVE INCREASED IMPORTATION.

A tentative minimum importation of crude rubber at the rate of 160,000 tons per annum with August and September allocations on that basis was recommended and figures submitted to indicate that the 100,000 tons basis was inadequate to meet the increased demand for rubber articles due to war activities and industries connected therewith, even granting restriction of automobiles within reasonable limits, elimination of all non-essentials and whatever might be accomplished through the matter of standardization and simplification of varieties and kinds of the whole industry. During the quarter ended June 30, 1918, the consumption of crude rubber was 52,000 tons, indicating normal requirements of at least 200,000 tons for the year. Licensed automobiles increased 53 per cent during 1917, and in estimating on half the rubber consumed in pneumatic tires in 1917 the War Service Committee felt it was going farther than the Government would eventually feel it wise to go in the reduction of tires for use on automobiles for essential purposes. The allowance of 100,000,000 pounds for truck tires for the coming twelve months will probably be about right, based on the present demand. The allowance of 105,000,000 pounds for all other goods, however, although that was the amount consumed in 1917, will be far too small, owing to the speeding up of many industries for war purposes and the consequent increased demand for mechanical goods; the much greater demand for hospital supplies and electrical insulation, and the fact that 60 per cent of the total capacity of the country for certain heavy grades of rubber footwear using the largest percentage of rubber is being taken by the Government. While much will be accomplished in economizing labor, space, etc., in cooperation with the Conservation Division of the Government, it is not likely that a reduction of poundage consumption of crude rubber will result, as elimination of styles and kinds in any line would be offset by an increased demand for those retained.

The statistics presented showed the necessity of increasing shipments of crude rubber to this country to avoid serious consequences, even though an excess amount shipped here be held for allocation later. It was pointed out that practically four months is required for delivery from the source to the manufacturer and that it would be far better to have an excess of rubber come in during the fall months when advantage could be taken of better transportation conditions from the coast than in the winter when everything possible should be done to lessen traffic congestion.

6.—PRINCIPLE TO BE ADOPTED.

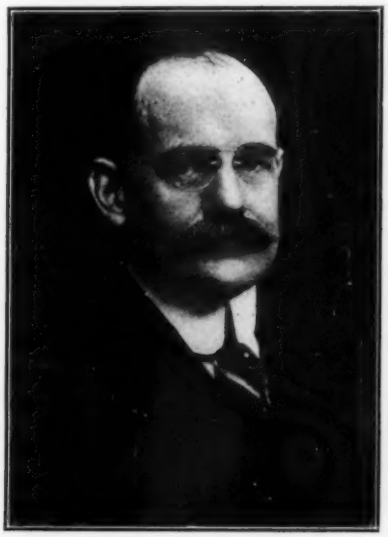
It was recommended that the only safe and logical course to follow would be to restrict the uses of crude rubber to any

necessary degree, however drastic, and then provide for the importation and accumulation of sufficient stocks to meet this requirement and tide over any temporary failure of transportation facilities, rather than to continue the present plan of allowing the estimated amount required to be dissipated through lack of control of the uses of rubber and failure to make provision for replenishing stocks.

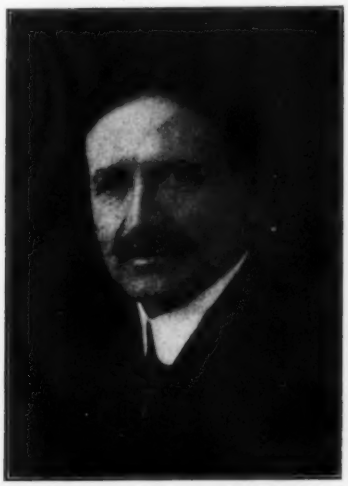
LUNCHEON OF THE WAR SERVICE COMMITTEE.

At a luncheon of the War Service Committee of the Rubber Industry of the U. S. A., held at the Waldorf-Astoria, New York City, on July 31, the activities of the committee since the last general meeting on May 10 were reported in detail and the memorandum to the War Industries Board was discussed. Approximately 500 men representing the rubber and allied trades throughout the country were present, some thirty-five or more of whom participated in the discussion.

BERTRAM G. WORK.



GEORGE B. HODGMAN.



HARVEY S. FIRESTONE.

THE ADDRESSES.

After the luncheon the meeting was called to order by Bertram G. Work, chairman of the War Service Committee, who explained its purpose and at once referred to the large amount of constructive work that had been accomplished by the central and divisional committees which have been constantly in touch with the various departments of the Government.

Continuing, he said in part:

This work, however, has not applied directly to the question of supply and consumption of crude rubber until a month ago, when the Government desired to make provision for shipping space to follow the allocation for May, June, and July. Possibly the War Service Committee has been remiss in not sooner recommending definite plans for a curtailment in the consumption of rubber, but from the start it has contended that the only logical way to restrict manufacture was to control the uses, though the Government seemed to feel that this could be done through restriction of importation.

Seventy per cent of the crude rubber imported in 1917 was used in the manufacture of tires of various kinds, and it has seemed impracticable to this committee to undertake to control the uses of various classes of motor cars by restricting the amount of rubber to be imported. This one difference of viewpoint has caused a delay in accomplishing the result desired by both the Government and the industry, which is much to be regretted.

The chairman then called on Charles Neave, general counsel of The Rubber Association of America, Inc., who outlined briefly how the War Service Committee came into existence through the suggestion of the Chamber of Commerce of the United States; how George B. Hodgman attended the War Service Conference, held in Washington, District of Columbia, December 12, as special representative of The Rubber Association of America, Inc., and reported it to be the duty of the rubber trade, like other important lines of business, to undertake, through a War Service Committee representing all branches of the industry, the work which had previously been done by the cooperative committees of the Council of National Defense, then recently dissolved, in assisting the Government to organize the war; and how the committee has been enlarged from five to eight members, viz.: Messrs. Work, Firestone, Gunn, Hodgman, Litchfield, Broadwell, Wilson and Sawyer.

Mr. Neave then read the following memorandum regarding the supply and use of crude rubber which had been prepared for discussion at a meeting of the committee with the War Industries Board in Washington, District of Columbia, on July 15, at which Judge Alton B. Parker presided:

CONSIDERATIONS PRESENTED BY THE WAR SERVICE COMMITTEE OF THE RUBBER INDUSTRY FOR ELABORATION AND DISCUSSION WITH REPRESENTATIVES OF GOVERNMENT DEPARTMENTS IN CONNECTION WITH PLANS FOR REGULATING THE IMPORTATION AND ALLOCATION OF RUBBER.

A. ESSENTIAL CHARACTER OF INDUSTRY.

1. The industry is an essential one because of the uses of rubber in almost every line of commercial activity and of war requirements, among which may be mentioned boots and shoes, clothing, surgical supplies, hot-water bottles, fire, steam and air-brake hose and the general line of so-called mechanical goods, electric apparatus and insulation for electrical conductors, motor vehicle and airplane tires, packings, gas masks, balloons, transmission belts, conveyor belts for handling coal, ores, etc.

2. The essential character of the industry under war conditions is emphasized by the rigid provisions to prevent the enemy from obtaining rubber, by the increased demand for rubber articles by the Government, the increased demand for solid rubber tires for motor vehicles in the United States (from two to three times what it was last year), and the fact that the rubber consumption in England, France, and Italy has at least doubled under war conditions, though the uses are there restricted.

B. RESTRICTION OF NON-ESSENTIAL USES.

1. In order to afford means for proper control of the uses of motor vehicles, rubber tires and gasoline, it is proposed that a Federal motor-vehicle licensing system be adopted and enforced through the existing state and local licensing agencies in accordance with a plan, the details of which are to be submitted

herewith. This will give accurate information as to the numbers of vehicles in each class of use, and upon such information restrictive measures may be based. It is estimated that such information may be obtained within thirty days after the license plates are ready for delivery.

2. Through the Conservation Division of the War Industries Board the reduction of sizes and styles of rubber tires is assured, and thus stocks will be reduced. This is being extended to all classes of rubber products.

C. NECESSITY AND MEANS FOR INCREASING SUPPLY AND STOCKS OF RUBBER.

1. The stocks of crude rubber in the United States are decreasing in spite of the abnormally large shipments in transit prior to the restrictions going into effect; such decrease will continue, and the shortage become acute if the present restrictions are long in force, producing a most serious situation and interfering with the prosecution of the war. It must be borne in mind that a period of at least four months elapses, after licenses are granted, before the rubber is available for use in the factory of the manufacturer. It is therefore desired to point out that foresight should play the essential part of the restriction program. It is firmly and conscientiously believed by the industry that 100,000 tons of crude rubber per annum is inadequate for the essential requirements of the country, and that by the time this becomes a self-evident fact it will be too late to replace the shortage in time to prevent a period of hardship which will be out of proportion to any gain hoped for.

The necessity for eliminating unessential uses of rubber products is obvious and will receive the hearty cooperation of the industry, but it is respectfully submitted that the creation of a shortage of crude material, and thus placing the country in jeopardy, is the wrong channel through which to accomplish the desired result.

2. This country is in danger of losing its foreign markets for manufactured rubber articles, the shortage of crude rubber supply contributing to preventing the United States manufacturers from assisting in filling the demands of the non-rubber manufacturing countries whose needs are being filled by others located at greater distances.

3. There is vacant shipping tonnage available for crude rubber importations; and, if the real reason for restricting importations is that cargo space shall be used for the most essential articles, it is to be noted that rubber may be shipped in bottoms not suitable for conveying other essential articles.

4. It is suggested that the Government, in order to insure its needs at all times, in spite of possible interruption of ocean traffic, accumulate a stock of crude rubber in this country. The Government could hold this rubber for an emergency as could no group of private individuals or corporations.

D. PRIORITIES FOR FUEL, SULPHUR, STEEL, COTTON, ETC.

The rubber industry being an essential one, and non-essential uses of rubber being restricted, as above suggested, the provision of the manufacturer's requirements of the above-mentioned and similar items, for use in the manufacture of rubber articles, should be assured.

E. STATUS OF THE FAR EAST.

1. The requirements of crude rubber in England, France, and Italy, even as increased by war demands, are inconsiderable relative to the supply at the plantations, which has been developed to meet the world requirements, of which those of the United States are the largest. The restrictions now imposed are such that there is an overproduction at the plantations, which will result, and has begun to result, in a disorganization of the plantation organizations and a consequent future shortage and an increase in price, to the detriment of the Government and the public. This will partly be met by the Government accumulating a stock here, as above suggested.

F. STATUS OF BRAZIL.

This is a complicated situation, as to which the War Service Committee would desire further information from the Government agencies, if it is desired that this Committee make recommendations.

Regarding the meeting with the War Industries Board and the subsequent action of the War Service Committee, the chairman said:

Each topic of that brief was discussed at length, but no conclusion reached on any. The meeting, however, was productive in result, inasmuch as it brought out the fact that while only 25,000 tons had been licensed for shipment during three months, 52,000 tons had been used. These figures portrayed an alarming situation, and confirmed the oft-repeated contention of the War Service Committee that 100,000 tons per annum would not provide for the essential needs of the country. The government officials took a serious view of the figures, but as there still remained a margin of time in which to correct any error in judgment, they requested the committee to obtain certain statistics bearing on the subject, which would enable them to arrive at a decision based upon actual facts. Questionnaires were sent out the next day, to collect the necessary information they requested.

I would like to say here, gentlemen, that if you can in any way answer the questionnaires more promptly, it will be a great help to the committee, and will facilitate getting quick action. I know they are an awful pest, and there are lots of them, but we have to have them. I make a plea for very prompt replies.

On July 16 a meeting was held, at the invitation of Mr. Thomas Slocum, of the Division of Planning and Statistics of the United States Shipping Board, who had invited about thirty representatives of the industry to attend. At this meeting, the industry as a whole was severely criticized for having consumed twice as many tons of rubber as the amount allowed to be shipped during the period under restriction. In other words, I regret to say that we were told we had not played the game, and must do something, if only temporarily, to reduce the consumption of crude rubber. One of the government representatives suggested that the output of pneumatic tires be reduced at least fifty per cent.

After this meeting, the War Service Committee had a conference with a representative of the War Industries Board, and expressed to him a sincere desire to cooperate. The result of this conference was the preparation and delivery by members of the War Service Committee to the War Industries Board, of the following presentation, which I will ask Mr. Neave to read also.

Mr. Neave then read the memorandum of July 22 from the War Service Committee to the War Industries Board, the salient points of which have already been presented on a previous page.

Continuing again, the chairman said:

Gentlemen, the War Industries Board gave full consideration to this brief, and replied to it in a definite manner, which Mr. Neave will read a little later.

The nature of our industry precludes the possibility of any restriction or regulation being fully equitable, as applied to its various large, medium and small units. We are doing our best to be fair to all, and if any cases of unusual hardship develop, the committee will be glad to review them with the War Trade Board. This committee will welcome suggestions to bring about a better feeling of mutual confidence and cooperation between itself and all of the members of the industry it represents, in order that we may all do our utmost to aid the good men who are striving so hard to administer properly the affairs of our country.

Before reading the letter from the War Industries Board, it would be well to point out to those who are not informed as to the present government methods, or rather, necessities, that a request is a gentle way of giving an order. One department makes the request and another gives the order and enforces it. I am looking at Mr. Peterson now. In our case, the War Trade Board will enforce any and all restrictions that may be decided upon, as it controls absolutely the supply and uses of crude rubber. Through the War Service Committee the industry has been told fairly and frankly, "Control yourselves, or you will be controlled." This refers not only to conservation of labor, but the attitude and behavior of the industry in general.

Gentlemen, let me repeat what I said at the last meeting, namely, we hope that when the war is over, we may all look back and point with pride to the fact that our industry has come through clean.

Mr. Neave then read the letter of July 26 from the War Industries Board, which was published on page 671 of THE INDIA RUBBER WORLD of August 1, 1918.

Fred B. Peterson, director of the Bureau of Imports of the War Trade Board, was at this point called upon to announce the details of the next allocation of crude rubber determined on by the Government. Said he:

In view of the plans which are now under way by your War Service Committee, and the War Industries Board, it has been determined to make the next allocation, as Mr. Work has

said, for a period of sixty days instead of three months. The allocation for the months of August and September, therefore, has been arranged, or been allowed, at the same rate as the previous allocation, that is, at the rate of 100,000 tons per year. The present maximum government prices are also to remain in effect for these months.

The plan of allocation, while substantially the same as before, differs in certain details which have proved necessary in the light of the experience of the previous three months. The plan is as follows:

First, the requirements of the United States and Allied Governments, as heretofore, are to be met in full.

Second, the remaining amount is to be allocated to manufacturers at the rate of 3/8 of their consumption for the corresponding period of 1917. That is a change from the previous rate, which was 7/16; this is now 3/8. That change was occasioned by increased government demands, as shown by the experience of the previous three months, and also by a provision which has been made for taking care of the manufacturers who did not participate in the previous allocation, due to the fact that they did not show any, or only a partial, consumption for the year 1917.

Third, manufacturers who were not operating in whole or in part in the year 1917, are to receive an allocation on the basis of their mixing mill capacity, or where no mixing mill is employed, their churn capacity, in accordance with the formula submitted by the committee on rubber and kindred products of your association.

The amount permitted to come forward for these sixty days is based on a certain amount from the Far East, and a certain amount from South and Central America; and I wish to say to you gentlemen that it is the most earnest desire of the Government, based on considerations of tonnage saving and certain other considerations, that the available amount of South and Central American rubber be taken by you. This does not come as a command from the Government, because in our experience we have found not only that it is not necessary to attempt to command the rubber industry; when the way is pointed out which will be most conducive to winning the war, that is sufficient, and you gentlemen follow it nobly.

The manufacturers having government business are requested to make immediate application for 75 per cent of their probable requirements of rubber for government orders for the months of August and September. In order to facilitate shipments, advance applications from importers for moderate weights of rubber that has been sold, will be considered by the War Trade Board; any rubber so licensed to be subject to final disposition by the War Trade Board on its arrival.

This, gentlemen, is the plan of allocation for the next two months.

My attention has just been called to this fact: I stated that the allocation would be on the basis of 3/8 of the manufacturer's consumption for a corresponding period in 1917. That would be their consumption during August and September of 1917. Our understanding when this was drawn was that your statistics would show the consumption of each manufacturer for those specific months. I am now informed that the statistics will not show that; so that the allocation will be 3/8 of 1/6 of the consumption for the year 1917.

In a few well-chosen remarks John W. Scott, director of the Textile and Rubber Division of the War Industries Board, followed, telling something of the organization and methods of the War Industries Board, pointing out the government policy of calling upon each industry to regulate where regulation is necessary, emphasizing the duty of every member of the rubber trade to clear his thoughts and recommendations through the War Service Committee, and stating that the Government is very fortunate in having Harry T. Dunn's acceptance of the newly created position of chief of the Rubber Section, within the War Industries Board.

H. E. SAWYER.

J. NEWTON GUNN.

P. W. LITCHFIELD.

In response to a call from the chairman, Mr. Dunn stated that there had been no opportunity to study the situation, and that while the requirements laid down seemed rather drastic, everybody has got to make sacrifices. The war must be won at the earliest possible moment, and to that end there will be casualities not only on the battlefield, but in industry. The problem is to mobilize the resources of all industries to meet government requirements with as little injury as possible, and in dealing with the problem as affecting the rubber industry, he said that he counted on the cooperation and assistance of every member of the trade through the War Service Committee and its sub-committees.

THE GENERAL DISCUSSION.

Copies of the memorandum to the War Industries Board were distributed to those present, and the meeting was thrown open for a general discussion in order that questions might be answered and light thrown on any doubtful points. Criticisms and suggestions were invited. The following colloquy then ensued:

RECLAIMED RUBBER.

R. B. CAVERLY, Corona Rubber Co., Philadelphia, Pennsylvania: I notice in this list here a long line of materials which the Government is going to ask us to curtail. Niney-five per cent of them, if I do not mistake, can be made of reclaimed rubber. Am I to understand that if these articles can be made of reclaimed rubber, any restriction on the output would be insisted upon by the War Board?

THE CHAIRMAN: Yes. That brings up a point which we might as well make clear. In the beginning we were told the

only restriction was due to shipping space. We have since, though, been told very forcefully that we must also conserve the facilities of the country. Labor must not be used unnecessarily, or transportation. All activities that are not helping to win the war must be curtailed wherever possible.

MR. CAVERLY: Well, Mr. President, does that mean that you are going to put out of business the reclaimers? Why should they be put out of business, any more than any other manufacturer? To-day there is an enormous stock of scrap rubber in this country, and the reclaimers are only running 50 per cent. Now, why go abroad and send money abroad for crude rubber, when you can use reclaimed rubber, and you would use reclaimed rubber if crude rubber was a dollar a pound to-day. It only needs to put up the price of crude rubber to have everybody using reclaimed.

As to the labor, in the majority of the reclaiming mills 80 per cent of the work is done by equipment, and I know for a fact that the labor used in most of the reclaiming plants is such that it could not be used in other industries. They are old men, cripples and women. Why not use the scrap rubber you have in this country, and keep an industry going which you may be glad to have before this war is over? If you are going to shut it down, or going to run it so that it cannot exist, when the time comes that you do want it, it will have been dissipated.

Automobile tires can be made of reclaimed rubber. They may not run 5,000 miles, but they will run 1,500 miles. And 65 per cent of the tubes in this country have not got a scrap of crude rubber in them.

THE DIFFICULTIES OF NEW AND SMALL COMPANIES.

GEORGE K. MCCLOUD, Perfection Tube Co., Painesville, Ohio, asserted that there is a demand for good tubes, but did not believe they could be made of reclaimed rubber. His company, organized about three years ago, sold enough pure gum tubes to western farmers last year to enable it to place orders for eight to twelve tons of crude rubber monthly this year. Certificates for this rubber are now required, but could not be produced because of the small production last year. As a consequence it is impossible to get some rubber which the company had on order. Either some concession must be obtained or the plant closed. It is a hardship on the people who had ordered the tubes as well as the company.

F. W. O'BRIEN, Long-Wear Rubber Co., Elyria, Ohio, stated that his company began manufacturing automobile tires and tubes in May, and that in July production was 300 per cent greater than in June; that company had plenty of crude rubber at the moment, which it had been possible to get in the open market, but would not be able to get enough in August to meet requirements. Continuing, he said:

We have about half a million dollars of capital employed over there, and we have plenty of capacity in the way of mill room and calender, and what I would like to know is this, if there are other new manufacturers here who are willing to coordinate their efforts with us in the manufacture of things that the Government needs, in the way of gas masks or different things like that, that are necessary for the Government to win this war; if we could not get together and coordinate our efforts, and manufacture some little thing that is necessary for us to win this war.

We are willing to turn over our entire capacity and our floor space and everything else, if we could get some business to employ our capital. We have plenty of female labor in Elyria, and we could turn out a lot of things that the Government requires. If there is anything that we could make, or if we could coordinate our efforts with any other new manufacturers to turn out anything that the Government requires, over and above our normal requirements for rubber, we want to do it.

THOMAS FALLON, Lion Tire & Rubber Corp., Lafayette, Indiana, said that his company is at the disposal of the Government; that it stands ready to make anything the Government wants, and will carry out the wishes of the War Service Committee even if the plant has to be closed. He explained that the company has been organized about two years and has enough rubber and fabric contracted for to last possibly four months, but asked how it is to proceed after that period when the July and August allocation will not be enough to operate on.

Now, the question is, went on Mr. Fallon, we have two contracts, one that is practically closed, and another prospective contract on hand. We are also going into making, and are making the molds now, for a hard rubber tire; in other words to fit a Ford car. We are in the dark as to what the future will bring forth for us. We have authorized another $100,000 of preferred stock. We would like to say to our stockholders what we are now to do, what the future will do for us. I realize the Government cannot explain every little detail to the small manufacturer here, or the big one; but the little orphan is the one that wants to be helped.

Mr. Fallon suggested that the small rubber factories be assigned a certain number of tires and tubes, or half-soles and heels, or small mechanical goods in order that they might continue to exist.

We are willing even to operate to pay expenses, he asserted, to keep that factory going, and to do everything possible to help the Government, if they can do something to help us by giving a small allotment of business to us; we stand behind it by giving a bond for the fulfilment of our contracts, and that our goods going out will be just as good as the other fellow's. And I just wondered if this board could take that into consideration, in helping the little fellow to take care of himself, to allow him a certain amount of business to do. If you are going to give it all to the big ones, of course there will be little or nothing left for the little fellows. It is true you have efficiency and capacity in the big industries, but we have a corresponding amount of efficiency in the smaller plants, and we will not have the rubber to operate.

R. H. SOTHERLAND, The Mansfield Tire & Rubber Co., Mansfield, Ohio: As a representative of one of the smaller companies, we are willing to go fifty-fifty. We are manufacturing penumatic tires. We are perfectly willing to turn the entire production of The Mansfield Tire & Rubber Co. over to the Government, providing we can get these particular war orders that they want. We are willing to do one hundred per cent. I have got a boy who is in France, and I am just as patriotic as anybody else in this assembly, and I know that he stands to sacrifice all, if it is necessary to sacrifice, and if it is for the United States Government we don't care. But we want the blow to come on a fifty-fifty basis, and I am for the small manufacturer at this particular moment, as to how we can participate in that which is of benefit to the Government in every community.

We cannot afford to sacrifice the capital invested, and, furthermore, we cannot afford to sacrifice the labor involved. Every one of the members of your labor organization is a United States citizen, and we want to come clean. Now, what is the answer?

THE CHAIRMAN: I will recommend to our committee the appointment of a sub-committee to take that matter up. Of course, we have no direct power in this committee, in placing government business, but we can take the matter up with the Rubber Division of the War Industries Board now, and possibly accomplish something. Heretofore there has been no Rubber Division of the War Industries Board, and we had no direct government agency to deal with in matters of that kind.

SHIP TONNAGE.

CHARLES E. WOOD asked if the rumor were true that a ship was coming from the East with 7,000 tons free space; also if ships and schooners were coming from Brazil with free space of 100 to 300 tons.

H. E. SAWYER: We have heard what the gentleman just alluded to, particularly as to one ship from the East, coming across the Pacific 7,000 tons light. We are told by the Shipping Board in Washington that that is just exactly what they want to have happen, that that is the only way that the Pacific shipping will be forced ino the Atlantic, where the Government wants to use the shipping for getting the men, supplies for the men, and supplies for our Allies, to the Continent of Europe; and that if the rubber industry or any other industry is allowed to use that vacant space simply because it is vacant, those ships will continue to ply back and forth across the Pacific instead of coming around to the Atlantic, to seek tonnage.

Your War Service Committee called particular attention to that particular case, when we were in Washington July 15 and 16, but the Shipping Board very distinctly said, "That is exactly what we want to have happen."

MR. WOOD: Well, if that is the case, and there are boats coming, there are a great many manufacturers I know of to-day that have got rubber coming; so why should not the dealers be allowed to bring in rubber enough to take care of the manufacturers that have got rubber coming, and will not be able to furnish allocation certificates, thereby making a great loss to

those manufacturers? If there are boats coming light. I should think that could be arranged.

BASIS OF THE ALLOCATION.

W. O'NEIL, The General Tire & Rubber Co., Akron, Ohio, said that last year was past history, and expressed the opinion that it was going too far to take last year as a basis to determine the allotment or the amount of tires made. Organizations and equipment, he said, were for this year, and if the months of August and September were taken and cut down 50 per cent over the last two months or the average for the last six months, not nearly as much damage would be done. Certain manufacturers, he understood, are making only one-third as many tires as last year at certain times, and as they have a large stock ahead, will be able to increase production.

THE CHAIRMAN: I explained on that point, that the Shipping Board bases everything on the consumption of rubber in the United States in 1917; 160,000 tons were consumed, and they figured that 100,000 tons would be sufficient; so any curtailment figure must be on the basis of 1917 consumption.

Further than that, there are no statistics available for the War Trade Board except those of 1917. They would have no basis upon which to allocate rubber for use in tires for the first six months of this year, and they must take last year as the basis. We did not make the rule, they made the rule; and please do not think that this committee is responsible for all these things, because we are not. They are quite arbitrary; they refuse very often to discuss a matter. They make the rules, and ask us to see that they are followed.

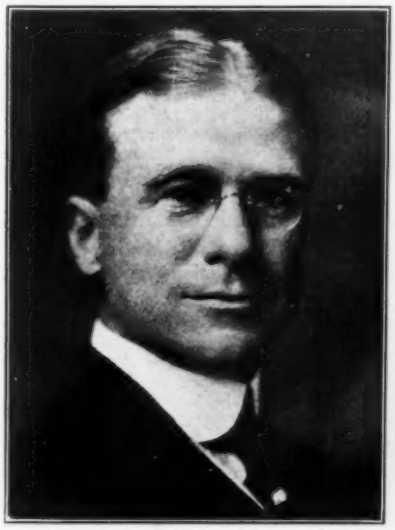
MR. O'NEIL: Well, you could get the statistics just as well for the last six months or the last two months, as you had for last year. You could easily get those statistics, and it would make much less difference in your organization.

Suppose a man made only 100 tires a day last year, and this year he is making 500 tires a day; you cut him down to 50 tires a day, and his organization and his equipment are not worth anything. It is causing too much of a turnover proposition. Suppose a man made poor tires last year, and has not got the demand for them this year; then if he is able to make half what he made last year, the public has got to take them, because they are the only people who will get the rubber to make the tires.

THE CHAIRMAN: Gentlemen, the point Mr. O'Neil makes is a good point in question for the industry as a whole to take up with this committee. If you want this committee to make any recommendation to the Shipping Board and the War Trade Board and the War Industries Board, we are prepared to do it. Whether they will approve it, is up to them, but as far as we are concerned, we will be very glad to make recommendations on any basis that will be the best for the greatest number of people. We will be glad to hear remarks from others on that same subject.

Mr. Fallon suggested that any company that is good for anything can give a sufficient bond to anyone demanding it for the fulfilment of a contract, and that this should be sufficient guarantee of the quality of the goods.

THE CHAIRMAN: That is a different question from the one we are talking about. But do you all appreciate that this is only a sixty-day regulation, and that we are full of hope that we will procure for the Government during this sixty days information which will make them feel that the amount of rubber to be imported should be largely increased. We also feel that if they adopt this Federal licensing plan, that they will find very few of the present uses of an automobile can be dispensed with. If it can be done and done without injury, it probably will be done; but we have the feeling that when we get the information, there will be very little opportunity for making any curtailment, and when they get all these facts and figures, then they are going to give us the rubber we need, and it is only a temporary period we are going through now, to get this information during the next sixty days.



HARRY T. DUNN.

CHARLES T. WILSON.

E. H. BROADWELL.

GOVERNMENT CONTRACTS FOR SMALL FIRMS.

PHILIP FRESHWATER, Kansas City Tire & Rubber Co., Kansas City, Missouri, stated that his company started operation in September, 1917, with a million dollars investment. Although it used 40 tons of crude rubber monthly, its last allotment from the government was five tons monthly. Unless more could be secured than the present arrangement provides for it would be necessary to go out of business.

A colloquy then followed between Mr. Freshwater, C. T. Wilson and the chairman, in which it was explained that on application to the War Industries Board there was an opportunity to have an allocation revised on the basis of mill capacity. Mr. Freshwater suggested that the War Service Committee recommend to the Government that when a small firm is cut to 50 per cent of its allotment it be tendered 50 per cent of government business for which it has the facilities, so that fixed charges can be paid until such time as a profit can be earned. The chairman offered to take this case to the War Industries Board.

W. H. HOLVERSTOTT, The Marion Tire & Rubber Co., Marion, Ohio, believed that the allocation of rubber based on 50 per cent of the consumption of August and September of last year will result in putting out of business nearly all of the new companies. These companies had been unable to secure government work, and without it and with a 50 per cent curtailment of output they would have to close their doors, because operating expenses could not be paid. He expressed confidence that through the War Service Committee the problem would be solved on an equitable and fair basis to all concerned.

JOHN G. GATES, The Gates Rubber Co., Denver, Colorado, related how his company was organized last year, and made from 200 to 250 tires a day, but this year had been operating on a basis of 1,200 a day, with a capacity of 3,000. If limited to 50 per cent of the average last year, which would be 125 to 150 tires a day, the business would be cut to about one-eighth and likewise an organization of practically 800 persons, all of whom had to be trained at the expense of the company. The whole plant, if necessary, would be turned over for government use, but he thought the organization, if it became necessary to curtail it, should be diverted to some other government work.

E. S. PHILLIPS, The Standard Four Tire & Rubber Co., Keokuk, Iowa, raised the question whether war contracts were mercenary and stated that they should all be patriotic, although some who had gone after them had found them hard to get. Neither the chairman nor the secretary could reply to his question as to the number of pneumatic tire manufacturers holding war contracts. Continuing, Mr. Phillaps said:

We are willing, gentlemen, to give you 100 per cent of all the profits of the Standard Tire Co. out at Keokuk, Iowa—they are going to be big this year, too—to carry the war, if you want it. It don't have to be ten per cent or fifty per cent; it can be all of it. The only thing we want is to live. I was told a while ago that money did not enter into this, because Mr. Sotherland had sent his son to war; but Mrs. Jones, who sent a son to war, has got money with lots of us, and she needs the money. With the son gone we are going to try to protect that money.

The chairman offered to transmit the case to the War Trade Board.

THE NEED AND POSSIBILITIES OF USING RECLAIMED RUBBER.

J. H. STEDMAN, Monatiquot Rubber Works Co., Braintree, Massachusetts, thought the real hardship was coming on two classes of manufacturers, namely, the small tire manufacturer and the reclaimer. He believed, despite Mr. Caverly's remarks, that inner tubes should have some crude rubber in them, but recalled that two tires running side by side on the rear wheels of his car had both given 3,500 miles, one having been made by a leading tire company and the other containing less than 10 per cent of crude rubber. Mr. Stedman went on:

Now, crude rubber is coming a long, long distance to us. Why is not the solution of this whole problem, Mr. Chairman, to let the reclaimer live, let him make the best reclaimed rubber that it is possible to make—have a "Victory" tire if you will, that the small fellow can make and sell to the farmer, and he can sell to the man who is buying a cheap second-hand car at two or three or four or five hundred dollars. Let those things operate. Let us go along, let us have our standard first-class tires, and let us put out a "Victory," tire, that will do, say, 2,500 or 3,000 miles. Then your small manufacturer of tires is going to be able to bridge over this shortage and the reclaimer is not going to be hit as hard as he would otherwise.

It seems to me that is a proposition that ought to be brought before the War Trade Board, because it is a real situation, it is a real worth while situation, and I earnestly hope that you will take that matter up and that you will consider it very seriously. Reclaimed rubber is made virtually within a thousand miles of where it is consumed, and oftentimes perhaps within five miles of where it is consumed, and you have not got that extra cost of transportation, you have not got that overseas shipping cost; you have got something that is right here in our front yards, or back yards, as the case may be, and it ought to be used to conserve our resources.

THE CHAIRMAN: Let me correct two impressions that I believe have been wrongly stated by Mr. Caverly to begin with. There is no intimation of any kind that the reclaiming industry is to be curtailed or in any way controlled. Undoubtedly the Government will foster the manufacture of reclaimed rubber, which is along the lines of conservation. The only curtailment of the reclaiming industry would be due to a sympathetic curtailment on account of the fewer manufactured rubber articles made.

The second impression is that the objection to making tires out of reclaimed rubber has something to do with saving shipping space of crude rubber. That is not the real reason. The Government wants to curtail the use of automobiles where it can. We do not believe that crude rubber is a big factor in that; if it was, then the suggestion of making tires of reclaimed rubber would be probably a constructive one.

Mr. Caverly then further emphasized the importance of utilizing reclaimed rubber in the present emergency. The so-called pleasure of to-day, he said, is rather a necessity. In 1903 one did well to get 1,500 miles from a set of tires, and he asked wherein there was an advantage in paying $90 for a 37 by 5 cord tire giving 8,000 miles instead of paying $35 for an ordinary tire giving 3,500 miles. Mr. Caverly further said:

When I proposed recently at a meeting of rubber manufacturers that reclaimed rubber could be used in a hundred places in this country where crude is being used to-day, I was answered by the fact that if the newspapers got hold of that, that we were manufacturing stuff out of shoddy, as they term it, for our boys at the front, they would pull the administration down. It seems to me that with all the money that this country has got to raise to pay bills, it is time to stop putting on this great big front. You ought to use what you have at hand, and be economical. If you are going to be economical, use what you have at hand. There are a thousand tons of scrap in this country that can be used to-day, and I again reiterate that 65 per cent of the tubes made in this country have not got a speck of crude in them, and I can prove it.

FORMULA FOR MIXING-MILL CAPACITY.

In response to the query of Mr. Gates if there is any allocation to new manufacturers on a basis of mixing mill capacity, C. T. Wilson said:

The allocation to the new manufacturers, or those who only operated a portion of 1917, will be based upon their mixing mill capacity. We worked out a formula, and the details will be sent to those to whom it will apply. We believe it will put them in just as good a position as the man who has received an allocation on the basis of 1917 consumption.

DR. WHIPPLE, Gryphon Tire & Rubber Corp., New York City, asserted that to be allowed to use only one-half of the 1917 consumption would not help matters.

W. J. H. DORAN, Dry Climate Tire Manufacturing Co., Denver, Colorado, a small reorganized company not operating last August and September, made a forceful plea for more rubber or government contracts to be handled jointly by several firms. He pointed out that the industries of that region were placed at a disadvantage in securing contracts because of their remote location; they were all small and that operatives could not therefore be transferred from non-war to war industries as in the East nor could individual firms with only small factories take government contracts, yet at least 50 to 75 per cent of the manufacturers in Denver were to be declared producers of non-essentials. He thought there ought to be some way to get some of the government business, since the firms generally were willing to turn over their factories. Unless something of this kind was brought about, payrolls would cease, the city and state would be depopulated, and the people, who had always gone "over the top" in everything the Government requested, could not keep up their Liberty Bonds, War Savings pledges and Red Cross contributions. He asked that consideration be given to the people of the Rocky Mountain region and said that on the present basis of allocation his firm would have to close and lose its organization.

The chairman suggested that the company report its case to the War Service Committee for transmission to the War Trade Board.

FIFTY PER CENT OF PRESENT CAPACITY SUGGESTED.

In order to bring about some definite conclusion, inasmuch as the program was to go into effect the following day, E. H. Wilson, Dural Rubber Corp., Flemington, New Jersey, suggested that manufacturers who were not running full time last year, or only to a small capacity for the months of August and September, be allowed to run at 50 per cent of their present capacity until the matter could be brought before the War Industries Board and some decision rendered. This was seconded by Mr. O'Brien, with a request for more rubber over

and above the 50 per cent with which to manufacture something for government requirements.

In response to the query of Mr. Joyce, Dreadnaught Tire Co., Baltimore, Maryland, as to how it was proposed to pledge firms to manufacture only 50 per cent of their production during August and September of last year, the chairman said he assumed that the War Industries Board would undertake to control the amount of rubber that can be used in the manufacture of pneumatic casings and tubes during the sixty days, Exhibit "E" in the memorandum giving the proposed form.

A. L. MURRAY, Double Fabric Tire Co., Auburn, Indiana, said the fact might as well be accepted that the Government had decided to import only a certain amount of crude rubber, and the question came up as to how it was to be divided between the large and small manufacturers. He regarded it common sense to presume that the bulk of the war work would continue to be done by large manufacturers, because of greater convenience and practicability. So far as pneumatic tires were concerned, he understood they were only a small part of the total government requirements. Small tire factories are not equipped to make anything else, and if fitted to make pneumatic tires, cannot turn out solid tires. Pneumatic tire production, however, is to be cut down very materially, and the question is, how much of this is to be done by the small manufacturer, whose very life it is, and how much by the large manufacturer, who has in many instances cut down 50 per cent of his pneumatic tire production in order to take care of government work, solid tires, etc. Small company business has increased very rapidly during the past year, he pointed out, chiefly because large companies have been busy with other things and competition has been less keen. The proposed plan of allocation would create practically an impossible situation for the firm making 400 to 1,000 tires a day and now cut down to 200. There is only one way, he thought, to save the situation. The Government wants only a certain amount of rubber used for tire production, and has statistics showing the use of 26,000 tons last year against 52,000 tons during the past three months of this year. If it is desired to cut down to 26,000 tons, why not use the past three months as a basis? It is the only way to give the small manufacturer a chance. It has got to come down, he believed, to a percentage of the present production or the production of the past six months. As to a mill capacity basis, a firm making 1,000 tires a day has mill capacity for that number or more, and if the rubber is to be divided on that basis it has got to come off of somebody else.

POSSIBLE CURTAILMENT OF POWER.

JOHN T. CHRISTIE, Hawkeye Tire & Rubber Co., Des Moines, Iowa, mentioned the possibility that curtailment of power might cut down production, his company having just been asked by a Des Moines electric company if it had any war contracts, and wanted to know if there was any danger of being cut off entirely. H. E. Sawyer replied that the question should be brought before the Priorities Board in Washington, District of Columbia, and John W. Scott explained that in general, if power were required for government work and there were not enough for all, the power would be taken for that work first and all else would have to wait until the government needs were satisfied.

LIQUIDATION OF CONTRACTS.

MR. FRESHWATER said many manufacturers had contracts out that had not been filled and he understood notice had been sent out to liquidate them. He wanted to know if it were true that some importers had maintained that where the purchase had been made above the government price the difference between that price and the agreed price must be paid in cash.

C. T. WILSON: It would be true if the rubber were sold for your account, you would have to pay the difference.

MR. FRESHWATER: Then if it is below the government price, does the importer pay you?

C. T. WILSON: He would, if he sold for more than your contract value; he should.

MR. WALLINGFORD, Mid-Continent Tire Co., Wichita, Kansas: Along that very line, the Rubber Association of America on July 15 put out this letter, and I will read the paragraph pertaining to it:

> With reference to rubber requiring War Trade Board allocation certificates for May, June and July, 1918 shipments, if the buyer does not within fifteen days after the date of publication of the Government regulations as to shipments in next following period, furnish allocation certificates to cover the rubber contracted for, the contract is to be liquidated at the then prevailing c. i. f. New York prices for prompt shipment from the primary market stipulated in the contract. Contracts for arrival shall be treated like shipment contracts, but settlement prices shall be advanced two cents over the price fixed for shipment contracts.

Now, I would like to have that explained. For instance, if I should have rubber bought for August and September shipment, which I have, and at a price of seventy cents—it is almost that—the c. i. f. price now would be in the neighborhood of forty-five cents, would it not?

C. T. WILSON: About that.

MR. WALLINGFORD: Then if I could not furnish allocation certificates to my importer, I would be penalized for the difference between forty-five cents per pound and seventy cents per pound, would I not?

C. T. WILSON: Correct.

MR. WALLINGFORD thought this favored the importer, but Mr. Wilson pointed out that rubber could be bought ahead at the price it could be sold for, that allocation certificates could be obtained at the time, and that if a contract at 70 cents were canceled and another bought at 45 cents, nothing would be lost. It would be necessary, he said, for Mr. Wallingford to complete his allocation certificates to take care of his contracts for May, June, and July shipments out of his two allocations. He admitted that an immediate hardship might be worked on small corporations required to pay the difference between contract and c. i. f. prices, but stated as his experience that wherever a manufacturer had played the game and given allocations to the extent he could he had found the importer more than reasonable in extending on the obligations for which he could not furnish certificates at the moment.

FIFTY PER CENT OF 1918 PRODUCTION REQUESTED.

THE CHAIRMAN: Now, gentlemen, we are listening to a lot of rhetoric, but we are really not doing anything which is constructive or definite. This Committee, and the War Industries Board want to take care of any small manufacturer that finds himself disproportionately penalized by this regulation. In the first place, what is a small manufacturer? Where do you draw the line? Could the small manufacturers formulate, among themselves, a recommendation to give to this committee, and that this committee could pass on to the War Industries Board?

We want your help, we want something definite. Personally, I think there may be some way to take care of them so that the burden will not come too hard; we certainly want to help you, but we have got to have something definite to work on. Possibly the best way will be to take up each individual case, let each man that calls himself a small manufacturer and feels that he is not being treated equitably present his case to the War Service Committee, and after we get them all in, then we may be able to formulate a general policy which would apply to all the manufacturers that come in that class, from which we can make a recommendation to the War Industries Board, the Rubber Division. Personally, I believe that that would probably be the best way to handle it; but if there are any definite suggestions we would like to hear them.

After an extended discussion in which Messrs. Gates, Weaver, Wallingford, Whipple, Baum, Fallon, O'Brien, Phillips, Holverstott, Hamilton, Reed, Freshwater, and Harrison participated, a motion proposed by E. H. Wilson, amended by Mr. Fallon, and seconded by Mr. O'Brien, that the chairman ask the War Trade Board that the restriction in the production of tires and tubes for August and September be based upon 50 per cent of the average monthly production during the first six months of 1918, was adopted.

MR. WILSON first proposed 50 per cent of their present production on behalf of "manufacturers who were not in business last year, or who were producing a very small amount," but the

chairman pointed out the likelihood of a difference of opinion as to the meaning of limited production and that no discrimination could be made between large, small, and medium companies. To this Messrs. Wilson, Fallon, and O'Brien agreed.

MR. GATES said that on a basis of last year his company would have to discharge 75 per cent of its employes, which would hardly be fair to them. O. L. Weaver, Star Rubber Co., Akron, Ohio, added that his company would be placed on less than 20 per cent of its present output, on which basis overhead expenses could not be made. He asked if the War Industries Board wished it to operate on that basis when it had the material on hand which it was encouraged to buy as free rubber at the last meeting, and also what, if anything, was going to be done to restrict prices of stocks that are in existence in jobbers' hands.

MR. WALLINGFORD advocated allowing small manufacturers 50 per cent of their mill capacity, asserting that 90 per cent of them would agree to it, but the chairman explained that this was a different question; they might get plenty of rubber and not be able to use it.

MR. WHIPPLE also alluded to this and asked whether tires and tubes could be turned out on a basis of mill capacity.

THE CHAIRMAN explained that the motion took care of that.

J. E. BAUM, Empire Rubber & Tire Co., Trenton, New Jersey, opposed the motion because he believed it did not afford a proper measure of relief. His company to-day, he said, has double the capacity of a year ago, and under this rule would be allowed only 25 per cent of capacity production whereas many others would be allowed 50 per cent. He pointed out that in raising money to prosecute the war the Government had adopted the principle of laying the burden on the man best able to stand it. An extension of this principle in this case would give the small manufacturer a considerable proportion of his capacity and the larger manufacturer, with millions of output and many war contracts, a larger proportion of the burden. Such large firms had large enough capacity to take care of overhead even if materially cut down.

MR. FALLON then proposed to amend the motion to a basis of 50 per cent of the first six months of this year. Like many other firms, he said his company's production was double that of last year and that on last year's basis not 10 per cent of the overhead could be made. On this year's basis it would be possible to break fairly near even. The amendment was duly accepted. In response to the chairman's query Mr. Fallon agreed that it was only fair that this should apply to both large and small companies, although he believed the large companies could take care of themselves.

MR. PHILLIPS expressed the opinion that the request contained in the motion would not be granted by the War Industries Board, and that there was more likelihood of being granted leave to operate on the basis of 50 per cent of last year's mill capacity until a final decision could be rendered than of securing 50 per cent of the first six months of this year as the basis for August and September.

MR. HOLVERSTOTT believed that adoption of the motion would prove a handicap and that the War Industries Board would listen to the case as presented by the various manufacturers before fully deciding to issue instructions.

In response to Mr. Gates' query as to how much more allotment he would have on his mill capacity than on 50 per cent of his daily capacity in tires, Mr. Phillips replied that his mill capacity last year was the same as to-day and that either basis was satisfactory to him, but that whereas companies that were manufacturing big last year would be cut 50 per cent on a basis of daily output, companies operating on a small scale last year would be cut 80 per cent. Mr. Gates thereupon suggested that if it were wrong to present the request contained in the motion, he would certainly leave it to the discretion of the chairman as to what to say to the War Industries Board. The chairman agreed, if it were the sense of the meeting, to take up the case as presented with the War Trade Board and ask for a ruling.

E. S. HAMILTON, Southerland Tire & Rubber Co., Fort Worth, Texas, said he thought the majority had implicit confidence in the War Service Committee, and moved that it be permitted to work out its plans, those feeling that they could not operate successfully under the plan outlined to meet after adjournment to formulate another scheme for recommendation to the committee. This was duly seconded.

T. ELY REED, Mercer Rubber Co., Hamilton Square, New Jersey, described the peculiar condition of his company. Although one of the old, although not large mechanical manufacturers, it had only within a few days begun the manufacture of about fifty inner tubes a day in a factory addition which had been in process of building and equipment for a year and a half. A ruling in accordance with the proposed motion would put it out of the tube business.

MR. WEAVER said that a group of manufacturers had asked that no rule be passed for curtailment of production until every element in the industry had been given an opportunity to be heard. If the meeting would pass Mr. Wilson's motion as amended, the recommendation of the War Service Committee to the Priorities Board in Washington would at least have serious consideration. That statement had been made by Judge Parker the previous evening.

MR. FRESHWATER was of the belief that if such a recommendation was to be made there should be a minimum daily output permitted to small manufacturers to enable him to make expenses.

Replying to the query of Clark W. Harrison, Bloomingdale Rubber Co., Butler, New Jersey, the chairman said that the Government had not committed itself as to which is the most important, conservation of shipping space or conservation of rubber, for a nation of one hundred millions of people with less than two per cent of them abroad. Both are important.

Mr. Wilson's motion as amended was then adopted by a rising vote of 53 to 25.

FURTHER DISCUSSION.

J. N. GUNN, United States Rubber Co., New York City: I should like to ask whether Mr. Weaver would consider that the interests to which he refers have been considered by this action this afternoon? That for the information of the committee.

MR. WEAVER: Decidedly, yes.

MR. FRESHWATER: The motion contained one clause which I wondered whether the gentleman intended.

MR. MURRAY: He asked 50 per cent on the allocation based on this year's production, I think. That would mean asking the Government to give us a larger total allocation than if it was based on 1917, would it not? Did he intend to ask the Government to give us more rubber than they have planned for? Did he mean to have the allocation based upon this year, whether it is 50 per cent or 40 per cent or 33⅓ per cent?

THE CHAIRMAN: Do you get that point, Mr. Weaver? It is rather a good point, and it is one that I brought up in the beginning. I do not believe that the War Industries Board would consider a basis of 50 per cent of the first six months of 1918, because it would provide for a larger output of tires than they contemplate. All of their figures are based on 1917. The point this gentleman makes is that you would be more apt to get consideration if you made the percentages less than 50 per cent, so the total amount made in August and September would not be more than 50 per cent of the average output for 1917.

MR. WEAVER: It would not be any more than the average percentage based on the first six months of this year.

THE CHAIRMAN: Regardless of what the percentage is?

MR. WEAVER: Certainly. It no doubt would be less than 50 per cent of the War Industries Board's final basis.

MR. O'NEIL: I believe our idea is that we should base it on the first six months of this year; if they cannot give us 50 per cent, give us what they can, but base it on this year. Still, we made the other motion, and let us go through with that motion.

As a secondary recommendation, I would say that we base our curtailment on the production the first six months of this year, whatever curtailment they are going to give us.

THE CHAIRMAN: The committee will be very glad to take it up immediately with the War Industries Board. I would like to point out that we cannot expect, as an industry, to get as full cooperation with the Board unless we immediately do cur-

tail. That is what they want us to do; we must curtail. Of course, they want, and we all want, to find as fair a basis upon which to make this curtailment as possible, but the industry as a whole must curtail and must do it at once. Otherwise we will have some very drastic rulings made arbitrarily by the Board, without consulting us at all.

MR. WEAVER: I should like to say, in view of the action here, that there will be no further representation made at Washington direct by any of the manufacturers, but that we will rely absolutely on the War Service Committee and their recommendations to the War Industries Board.

THE CHAIRMAN: I am very glad to have you say that, because I can assure you we will always do the best we can for everybody. This is exclusive of war orders; exclusive of all government business, as defined by the War Trade Board.

J. HARRY HARDMAN, Cortland Tire & Rubber Co., Belleville, New Jersey: Is the curtailment based on the tires or dollars and cents, inasmuch as there has been a big advance in value?

THE CHAIRMAN: Based on tonnage and tires.

I have two little matters I would like to present. This is a question by Mr. J. William Oliver, representing the Mercantile Bank of the Americas: "Do I understand your committee contemplates taking some action to allocate the total amount of rubber that may be shipped from primary markets? Say, of a total tonnage of 25,000 tons, 15,000 tons may be shipped from the Far East and 10,000 tons from Brazil and Central America?"

I think that I would say that nothing definite has been determined on. The Government is anxious, as Mr. Peterson said, to encourage shipments of rubber from Brazil, but no definite plan has yet been determined as to how to accomplish it. The War Industries Board have asked this Committee to formulate a plan at once and make recommendations. We propose to do that.

The meeting adjourned at 5 o'clock after tendering a vote of thanks to the gentlemen making up the War Service Committee.

WAR INDUSTRIES BOARD DENIES REQUEST OF WAR SERVICE COMMITTEE.

On August 2, Bertram G. Work, Chairman of the War Service Committee of the Rubber Industry, announced that the Committee had conferred with the War Industries Board and found it unwilling to adopt the recommendation that the curtailment in the production of pneumatic tires apply to the average production of the first six months of 1918 rather than to the average production of the year 1917.

The announcement continues in part as follows:

The War Service Committee realizes that this will cause unequal hardship on some of the newer manufacturers, and for the purpose of being able to present such cases for consideration of the War Industries Board a questionnaire is being sent to all manufacturers of pneumatic tires.

With this information before us the War Service Committee together with the Chief of the Rubber Division of the War Industries Board will try to make equitable adjustments in extreme cases.

Rightly or wrongly the Government does not feel that up to the present time the rubber industry has shown a proper spirit of self-denial and it is up to each and every member of the industry in addition to government regulations to do everything possible to conserve the use of rubber and other raw materials, the use of labor, and the use of transportation, and this applies to every branch of the rubber industry as well as the pneumatic tire business.

We firmly believe that the Government intends to be absolutely fair with our industry.

We do not feel that the Government will be justified in helping us or in increasing at some future time the amount of rubber that may be imported until the industry has given every indication of its desire and intention to cooperate.

What we do in this respect during the months of August and September will have a far-reaching effect upon the industry and its standing with the government departments in Washington.

Let us go the limit now. We believe this is the only way for us to get eventual relief—provided eventual relief is warranted.

We firmly believe that *the Government is going to allow all the pneumatic tires to be made that the Government eventually is going to allow to be used.*

We also believe that other articles of rubber manufacture will be produced in sufficient quantities to take care of the essential national needs.

Let us, therefore, through our sales organization, our correspondence and through general publicity discourage hoarding or speculation.

Let us try to educate the dealer—both large and small—to be patriotic in his handling of rubber commodities.

If this is not done by us and by the dealers in rubber supplies the Government will certainly take steps to prevent offenders getting our merchandise.

Let it be apparent at once that the entire rubber industry is one hundred per cent behind the Government in this great crisis of war.

Simultaneously, H. S. Vorhis, secretary of the Committee on Rubber and Kindred Products, issued an announcement to manufacturers explaining in detail the plan of allocation for August and September as stated by Fred B. Peterson, director of the Bureau of Imports of the War Trade Board, at the luncheon of the War Service Committee. To this was appended the following advices from the War Trade Board:

1. That they are crediting each manufacturer with 75 per cent of the amount of his allocation forthwith and that due advice of the amount will be forwarded direct by them; same can be checked against by allocation certificates forwarded at the same time. The remaining 25 per cent of the allocation will be credited and can be drawn against when the aforesaid plan is determined.

2. Manufacturers having government business are requested to make application immediately for 50 per cent of their probable requirements of rubber to be used in government contracts for the months of August and September. A further 25 per cent will be granted upon application when the plan covering the importation from Central and South America is announced.

In order to facilitate shipments, advance applications from importers for licenses covering moderate weights of rubber that have been sold under contracts will be considered by the War Trade Board when such applications are accompanied by an agreement to furnish manufacturers' allocation certificates to the War Trade Board within ten days.

THE RUBBER ASSOCIATION OF AMERICA, INC.

RUBBER manufacturers, importers and dealers were notified on August 12 by the Committee on Rubber and Kindred Products that in order to carry out the desire of the War Trade Board to bring forward a substantial amount of Central and South American rubber, the Bureau of Imports of that body has determined that during the present months of allocation, rubber used in government work will be replaced by issuing allocation certificates therefor as follows:

50 per cent to be Central or South American rubber;
50 per cent for rubber from any other source.

Allocation certificates so issued and designated to be for Central and South American rubber can be used only in support of an application for an import license from these countries.

There will, of course, be no objection to manufacturers using their usual allocation certificates for purchasing Central or South American grades, but there will be issued a distinct allocation certificate calling for the replacement of rubber used in government contracts that will be good only in support of a license calling for shipment from these countries.

Manufacturers have been credited by the War Trade Board with the remaining 25 per cent of the August-September allocation and applications to the extent of 75 per cent of the probable August-September consumption upon government business will be granted on the basis of one-half calling for Central or South American rubber and one-half for rubbers from any other source.

The trade was advised August 26, that Para certificates may be exchanged for certificates calling for rubber from any source.

SECOND ANNUAL GOLF TOURNAMENT.

The Outing Committee has arranged to hold the Second Annual Golf Tournament at the Trenton Country Club, Trenton, New Jersey, on September 25. The privilege of using the clubhouse and grounds was secured through the kindness of J. A. Lambert, of the Acme Rubber Manufacturing Co., who is a member of the Trenton Country Club.

WAR SERVICE COMMITTEE OF THE RUBBER INDUSTRY OF THE U. S. A.

REQUESTS FOR INFORMATION ANENT GOVERNMENT CONTRACTS.

THE offices of the War Service Committee have been moved to 52 Vanderbilt avenue, New York, where all requests for specifications or information regarding the securing of government contracts for rubber goods should be addressed in care of M. L. Heminway, secretary.

In a letter dated August 22, rubber manufacturers are advised that the War Trade Board has ruled that all orders on contracts for telegraph and telephone companies are to be considered as government business and therefore rubber consumed in such orders is subject to replacement without regard to allocation. These provisions were effective August 15, 1918, and apply only to shipments made on and after that date.

SHIPMENTS OF CENTRAL AND SOUTH AMERICAN RUBBER.

The following was sent to all rubber manufacturers and importers on August 20: In connection with the sales and purchases of South and Central American grades of crude rubber the War Service Committee recommends that they be made upon the basis of shipping weights in pounds, or tons of 2,240 pounds each.

Slight differences in transit shrinkages may occur on the same grade of rubber and for this reason shipping weights are a fairer basis to both seller and buyer, as the exact loss in transit cannot be predetermined.

The following is a list of shrinkage allowances for the various grades. These shrinkages are the maximum allowed by the War Trade Board to cover loss between shipping weight and the final dry weight in the factory.

SHRINKAGE ALLOWANCES ON SOUTH AND CENTRAL AMERICAN GRADES OF CRUDE RUBBER.

Grades.	Percentage shrinkage allowance.	Per centage that allocation should bear to shipping weight.	Grades.	Percentage shrinkage allowance.	Per centage that allocation should bear to shipping weight.
Fine Pará:			Coarse Pará:		
Upriver	25	75	Peruvian	30	70
Madeira	25	75	Mollendo	30	70
Manaos weak	25	75	Rio Negro coarse	30	70
Knapsack	25	75	Rio Negro stringa	35	65
Peruvian weak	25	75	Nugget coarse	30	70
Mollendo	25	75	Angostura coarse	30	70
Mattogrosso	25	75	Tapajos coarse	30	70
Islands	33⅓	66⅔	Xingu coarse	30	70
Tapajos	25	75	Ceara coarse (negro-heads)	30	70
Upper Xingu	25	75	Miscellaneous:		
Peruvian	25	75	Manicoba 1	30	70
Cut Angostura	25	75	Low Amazon weak	25	75
Medium Pará:			Ceara scrap 1	30	70
Upriver	25	75	Pernambuco sheet	35	65
Peruvian	25	75	Mangabeira sheet	35	65
Cut Angostura	25	75	Upper caucho ball	25	75
Coarse - Medium (mixed Para)	25	75	Caucho tails	25	75
Coarse Pará:			Lower Amazon ball	25	75
Upriver	30	70	Upper caucho slab	30	70
Mattogrosso	30	70	Upper Xingu ball	25	75
Islands	30	70	Central American rubbers	30	70
Cametá	30	70			

The manufacturer in making out his allocation certificate should compute the amount in accordance with the table which shows the percentage of the allocation to the shipping weight. For example: ten tons shipping weight of Fine Pará is equal to 22,400 pounds and 75 per cent of this amount or 16,800 pounds would be the amount of the allocation certificate. The importer in return for this certificate would receive an import license for ten tons shipping weight.

By using the various percentages given in the table for the various grades the manufacturers should have no difficulty in arriving at the proper amount of the allocation certificate necessary to cover a purchase. Bear in mind, however, that tons should always be reduced to pounds on the basis of 2,240 pounds each.

Purchases already made on the basis of landed weights require a different computation to determine the amount of allocation certificate and any one having contracts on this basis for which certificates have not already been issued may communicate with H. S. Vorhis, Secretary, The Rubber Association of America, Inc., 52 Vanderbilt avenue, New York City, in case further information is required.

RAINBOW DIVISION, SPECIAL LIBERTY LOAN RUBBER TRADE COMMITTEE.

THE following letter, calling attention to the Fourth Liberty Loan Drive, was sent to the rubber trade of Greater New York on August 22, by Bertram G. Work, chairman of the committee:

The Fourth Liberty Loan Campaign will begin September 28th and it is understood that the amount will be five or six billions.

The rubber industry has always responded promptly and generously to the call of the Government in past loans and without question will continue to do so as long as the war lasts.

Special attention is called to the fact that the amount of subscriptions to Liberty Bonds which the Government asks each community to find is based very largely upon the bank deposits.

Therefore the various units and individuals of the rubber industry carrying bank balances in New York should subscribe through their New York banks in proportion to the deposits carried in New York.

Many concerns and individuals did not appreciate this important point prior to the last loan and made subscriptions through other channels.

The committee desires also to point out that the subscriber's bank receives just as full credit for subscriptions placed through the committee as though placed directly with the bank. There was some misunderstanding on this point during the last loan campaign.

The committee takes great pride in the patriotism of the industry, as evidenced by subscriptions to past loans, and advice from you at this time to the effect that it is your intention to subscribe to the Fourth Loan, either in part or whole, through the committee, will be helpful and very much appreciated.

The following organization will represent the rubber trade of Greater New York in the Fourth Liberty Loan Campaign:

CHAIRMAN.

Bertram G. Work, The B. F. Goodrich Co., New York City.

VICE-CHAIRMAN.

George B. Hodgman, Hodgman Rubber Co., Tuckahoe, New York.

SECRETARY.

F. E. Titus, The B. F. Goodrich Co., 1780 Broadway, New York.

ASSISTANT SECRETARY.

W. H. Hills, The B. F. Goodrich Co., 1780 Broadway, New York.

CENTRAL COMMITTEE.

Bertram G. Work, chairman, The B. F. Goodrich Co.
George B. Hodgman, vice-chairman, Hodgman Rubber Co.
J. Newton Gunn, United States Tire Co.
W. J. Kelly, Poel & Kelly.
Homer E. Sawyer, United States Rubber Co.
Henry Spadone, Gutta Percha & Rubber Manufacturing Co.
J. Russell Parker, Parker, Stearns & Co.
Clarence H. Low, United States Rubber Reclaiming Co.
F. G. Achelis, American Hard Rubber Co.
Henry C. Pearson, "The India Rubber World."
H. M. Williams, "The Rubber Age and Tire News."

DIVISION COMMITTEES.

TIRES:

J. N. Gunn, chairman, United States Tire Co.
Horace De Lisser, Ajax Rubber Co., Inc.
J. B. Cothran, The Fisk Rubber Co.
C. D. Studebaker, Firestone Tire & Rubber Co.
Thomas S. Lindsey, Kelly-Springfield Tire Co.
Charles E. Miller, New York City.
H. J. Moorehead, The B. F. Goodrich Rubber Co.

CRUDE RUBBER:
W. J. Kelly, chairman, Poel & Kelly.
L. P. MacMichael, New York City.
A. H. Brown, Meyer & Brown.
Bancroft Henderson, F. R. Henderson & Co.
E. E. Wadbrook, Mac Namara & Wadbrook, Inc.
Collier W. Baird, Rubber Trading Co.

BOOTS AND SHOES AND CLOTHING:
Homer E. Sawyer, chairman, United States Rubber Co.
F. R. Goodell, Converse Rubber Shoe Co.
F. M. Sheppard, Jr., Goodyear Rubber Co.
E. C. Beard, Beacon Falls Rubber Shoe Co.
D. A. Hawkins, United States Rubber Co.
F. H. Edmester, J. E. Bates & Co.

RUBBER MEDICAL GOODS:
J. Russell Parker, chairman, Parker Stearns & Co.
W. W. Siggis, Whitall-Tatum Co.
N. B. Quick, Miller Rubber Co.
L. H. Rindskopf, Brooklyn Shield & Rubber Co.
John C. Smith, United States Rubber Co.
John T. Humphrey, United States Rubber Co.

MECHANICAL RUBBER GOODS:
Henry Spadone, chairman, Gutta Percha & Rubber Manufacturing Co.
W. H. Hart, The B. F. Goodrich Rubber Co.
H. M. Greene, Manhattan Rubber Co.
L. F. Purtill, New York Belting & Packing Co.
W. R. Bliss, Goodyear Tire & Rubber Co.
J. Stuart Brown, Gutta Percha & Rubber Manufacturing Co.

RECLAIMED RUBBER:
Clarence H. Low, chairman, United States Rubber Reclaiming Co.
Clark W. Harrison, Bloomingdale Rubber Co.
Lloyd Appleton, F. H. Appleton & Son, Inc.

HARD RUBBER:
F. G. Achelis, chairman, American Hard Rubber Co.
Samuel Dodd, Vulcanized Rubber Co.
Harry Weida, India Rubber Co.
Bruce Bedford, Lucerne Rubber Co.
John A. Dickson, American Hard Rubber Co.

PUBLICITY:
H. C. Pearson, "The India Rubber World."
H. M. Williams, "The Rubber Age and Tire News."

Chairman Works' plan in the present campaign is to operate on the basis of committee divisions rather than the zone system which was employed in the last campaign; the members of the central committee, acting as chairmen of division committees, being responsible for the solicitation of subscriptions from the division of the industry represented by their classification and supported in their efforts by the members of their respective division committees.

Each of the large rubber companies making a variety of goods will be assigned to the committee for the product which represents the chief output of that company, while proportional credit on a percentage basis will be given those division committees representing the other products of the company.

THE FOURTH LIBERTY LOAN.

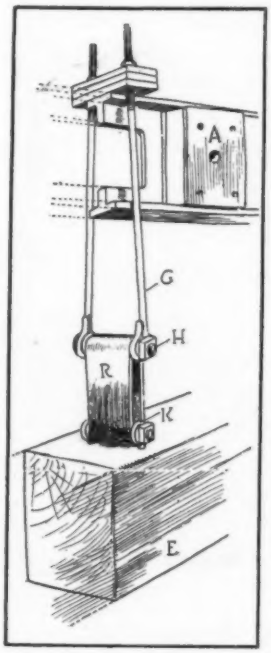
The campaign for the Fourth Liberty Loan will open September 28 and end October 19. The amount of the loan will be $6,000,000,000 and the bonds will bear 4¼ per cent. Preparations throughout the country indicate an unprecedented effort. The shorter period will enable more business men to enlist as workers and insure a more intensive campaign. As in the case of past loans, the rubber industry is anticipating this new call to duty with patriotic spirit, and all indications point to a handsome showing.

Liberty Loan 3½ per cent bonds of the first issue are now selling above par and on August 28 reached 102.06. This is held to be due to increasing taxation and the decrease of the issue through conversion. Secretary McAdoo has this to say about these and all other Liberty Loan bonds:

I earnestly hope that every one who has bought Liberty bonds will try to keep them for the period of the war at least. . . . If each and every purchaser keeps his Liberty bond he helps to protect the credit of the Government by maintaining the market for the bonds at par, which is a very helpful thing in war time, and he also renders a more essential service to our soldiers and sailors in the field by practicing those economies and savings which release materials and labor necessary to the support, if not the very life, of our Army and Navy .

RUBBER FOR TESTING AIRPLANE WING RIBS.

A paper on "A New Method for the Testing of Airplane Wing Ribs," by Irving H. Cowdrey, read before the American Society for Testing Materials, is interesting as showing how load application and distribution are controlled by a series of rubber bands.



Brief quotations from the paper are given below to show how the variable distribution of load to the wing rib under test was provided for by the use of a series of 14 rubber bands of the same length and thickness but of varying widths.

The method of attachment of the bands is shown in the cut where a single band R is seen placed over a bolt K lag-screwed to a timber E, and a bolt H in a stirrup G suspended from the upper surface of the wing rib A under test. This arrangment proved a satisfactory method of distributing the test loads, because all the rubber bands in the series were of uniform properties and their widths were made directly proportioned to the load each band was expected to apply. The bands were obtained by cutting sections from a motorcycle red inner tube of the size for a 28 by 3-inch tire.

MEETING OF THE RUBBER SECTION OF THE AMERICAN CHEMICAL SOCIETY.

The annual meeting of the rubber division of the American Chemical Society will be held at Cleveland, Ohio, during the week of September 9 and a large attendance is confidently expected. A most interesting program has been prepared and the following papers and reports will be read and discussed:

1. "The Determination of Lampblack," by A. H. Smith and S. W. Epstein.

2. "Laboratory Methods for Determining the Degree of Vulcanization." Discussion opened by D. F. Cranor.

3. "The Fruit-Jar Ring Situation." Discussion opened by Charles P. Fox.

4. "Vulcanization of Rubber at Constant and by a Series of Increasing Temperatures," by G. D. Kratz and Arthur H. Flower.

5. Report of the committee on the "Poisonous Nature of some Accelerators and Precautions Regarding their Use." Discussion opened by Dr. R. D. Earle.

6. Report of the Executive Committee. Dr. L. E. Weber, chairman.

If you can't put the "I" in "Fight," you can at least put the "Pay" in "Patriotism" by buying Liberty bonds.

War News of the Rubber Industry

Unskilled Labor Recruiting Under Federal Control. Sabotage Charges Against Raincoat Makers. France Is Proud of Her American Allies. Few Pneumatic Tires for New Equipment in 1919. Limited Supplies of Jelutong and Pontianak to Be Imported. Sale of A. W. Faber by Alien Property Custodian. German Business in America Taken Over. An Army Slicker Lasts 16 Months. Service Notes and Personals. Martyrs to the Cause of Liberty. Letters.

UNSKILLED LABOR RECRUITING UNDER FEDERAL CONTROL.

UNDER the labor recruiting program of the United States Employment Service, which became effective August 1, the following regulations govern private recruiting:

BY EMPLOYERS IN WAR WORK.

PRIVATE RECRUITING OF UNSKILLED LABOR.

1. Employers may continue to hire workers who apply at the plant without solicitation, direct or indirect.

2. The Federal Director of Employment in each state is authorized to grant permission to employers to use their own field agents for recruiting unskilled workers under his direction and control for war industries located within the state.

3. Permission to recruit unskilled laborers in states other than the one in which the work is located may be secured from the Director General of the United States Employment Service upon the recommendation of the Federal Director of Employment for the state in which the men are needed. Such permission will be communicated by the Director General to the Federal Directors for the states in which the labor is needed and from which it is to be recruited.

4. No unskilled labor may be transported from one state to another without authorization from the Director General, to be secured by application through the Federal Director of Employment for the state in which the labor is recruited. No laborers may be moved from one employment district to another within a state without authorization from the Federal Director of Employment for the state.

5. Employers who receive permission to transfer workers from one state to another or from one district to another within any state must file a statement with the nearest employment service office, of the number of men transferred, the wages offered, and other terms and conditions of employment promised to the men.

6. Employers who are permitted to use their own field agents for recruiting labor must in no case use any fee-charging agency, or use any agents or labor scouts who are paid for their work on a commission basis.

7. All advertising for unskilled labor, whether by card, poster, newspaper, handbill, or any other medium, is prohibited after August 1, 1918. This applies to all employers engaged wholly or partly in war work, whose maximum force, including skilled and unskilled laborers, exceeds 100.

RECRUITING SKILLED LABOR.

No restrictions are for the time being placed upon employers engaged in war work in recruiting their own skilled labor, other than that they should so conduct their efforts as to avoid taking or causing restlessness among men who are already engaged in other war work, including railroads, mines, and farms, as well as work covered by direct and subcontracts for departments of the United States Government.

Federal directors of the United States Employment Service for the several states are instructed to give every possible assistance to employers engaged in war work who desire to recruit skilled labor.

Employers in war work are at present under no restrictions as to advertising for skilled labor, other than that all advertising should be designed and conducted so as to avoid creating restlessness among men in war work (as above described).

Briton (facetiously): I SAY, OLD CHAP, MIGHT I BORROW YOUR AMERICAN RAINCOAT TO FILTER SOME WATER?"
Yankee: "SORRY, BUT THE BAKER HAS IT SIFTING FLOUR."

BY EMPLOYERS IN NON-WAR WORK.

Non-war industries should not offer superior inducements, or in any other way undertake to compete for labor with the Government or with employers engaged in war work. Methods of recruiting and of advertising which do not offend against it are permitted.

SABOTAGE CHARGES AGAINST RAINCOAT MAKERS.

The Sabotage Act, passed by Congress April 20, 1918, has for its object the prevention of frauds through delivery to the Government of faulty manufactured articles, including clothing. The law classes wilfully defective work on war materials as obstruction of American military preparations, and conviction carries a maximum fine of $10,000, or imprisonment for not more than 30 years or both.

The first indictments under the new law, twelve in number, charge nineteen individuals and two firms operating factories in New York and Brooklyn, with furnishing defective raincoats to the Government.

The men indicted are Harry E. Lazarus, Samuel Josephs, Samuel Levine, Tolly Clamon, Morris Lesser, Harry Stenge, Simon Harris, William and Joseph Sydeman, Ralph Cohen and the Yorkshire Manufacturing Co., Arthur Zittel, Felix Goulod, Aaron B. Levinsky and the Levinsky Sons' Raincoat Co., Inc., Louis J. Fried, Charles and Benjamin Plottel, Samuel Halpern, William Hanauer and Ralph Rosenthal. Other indictments are expected to be returned soon.

Several of the persons accused are under previous indictments alleging payment of commissions to Federal officials who are said to have aided them in obtaining contracts, and also in connection with the alleged bribery of Captain Aubrey W. Vaughan, of the Quartermaster's Department, to accept the defective raincoats. It has been discovered that 51 per cent of the 55,000 raincoats supplied by these men and firms were defective.

By order of Brigadier-General R. E. Wood, the Acting Quartermaster General, all contracts outstanding for raincoats with

the indicted firms and individuals, also the firms represented by some of the latter, have been cancelled and their existing supplies of raw materials, partly manufactured materials, and completed raincoats have been commandeered. All raincoats so commandeered are to be inspected. Those which are up to specifications are to be put into stock, and those which are rejected are to be held on account of the contractor from whom they were taken.

GOVERNMENT WANTS NAMES OF RAINCOAT MANUFACTURERS.

The Clothing and Equipment Division of the War Department is desirous of having the name of every reputable concern in the country that makes or has made raincoats or may wish to produce them in the near future. All letters should be addressed to the Quartermaster General, Waterproof Clothing Section, 109 East 16th street, New York City. This is apparently the opportunity for concerns that previously have never made double-texture clothing but have recently expressed a desire to enter the raincoat field.

FRANCE IS PROUD OF HER AMERICAN ALLIES.

The following communication from a well-known French rubber merchant epitomizes the indomitable spirit of France and her gratitude for America's timely assistance.

To the Editor of THE INDIA RUBBER WORLD:—

I beg to hand you enclosed note concerning my son, which you can publish in THE INDIA RUBBER WORLD if you think it convenient—with my best thanks.

We are very proud of our American friends, and now full success is a certitude, thanks to your intervention for the immediate benefit of humanity.

I would gladly take care of an American soldier or officer of the American army, if known by you.

Yours sincerely,

M. EMILE ALCAN.

75 Rue Saint-Lazare, Paris, July 23, 1918.

The note referred to in the above letter was as follows:

Captain Adrien Alcan of the firm of Alcan & Co., successors to Hecht Brothers & Co., importers and dealers in rubber, has been attached, since some time, to the French Mission with the American Headquarters in France.

Captain Alcan has been wounded twice in the course of the war and has received the Cross of the Legion of Honor and also the Croix de Guerre, with palms, for his gallant conduct on the battlefields.

FEW PNEUMATIC TIRES FOR NEW EQUIPMENT IN 1919.

Although manufacturers of automobiles had voluntarily agreed to cut their production of passenger cars 50 per cent beginning with August of this year, the War Industries Board has decided that a cut to 25 per cent of the production during the entire year of 1917 must be made for the balance of this year, and the manufacturers have been advised to get on a 100 per cent war stock basis not later than January 1, 1919, if possible. The War Industries Board states that there will be little, if any, steel, rubber to other principal materials required in the construction of passenger cars available for non-war industries after war requirements shall have been provided for. This points to the conclusion that few pneumatic tires in small and medium sizes will be required for new equipment next year.

LIMITED SUPPLIES OF JELUTONG AND PONTIANAK TO BE IMPORTED.

The restriction imposed by the War Trade Board upon the importation of jelutong and Pontianak has been modified in a new ruling (W. T. B. R. 193.) to the extent of permitting the importation of a limited amount necessary for essential purposes in this country during the remainder of the calendar year. The amount so licensed will be allocated by the Bureau of Imports of the War Trade Board among manufacturers in accordance with their requirements for the production of commodities essential to the successful prosecution of the war.

SALE OF A. W. FABER BY ALIEN PROPERTY CUSTODIAN.

Joseph F. Guffey, director of the Bureau of Sales of the Alien Property Custodian's office, will sell at public auction on September 17, at 11 a. m., the business of A. W. Faber, manufacturer of stationers' rubber goods, at the plant at Dickerson and Hecker streets, Newark, New Jersey. The sale will include all assets used in a going concern, in addition to all patents, trademarks, formulas, processes, etc., used in the manufacture of the products of the company.

A. W. Faber is the trade name of a business which has been in existence since 1761, with its principal office at Stein, Bavaria. It was owned by Alexander, Count of Faber-Castell, and his wife, Otillie, Countess of Faber-Castell, residents of Stein, Bavaria.

For more than fifteen years the offices and factory of the American branch have been at Dickerson and Hooker streets, Newark, New Jersey. The business consists of the manufacture and sale of erasers, rubbers, rubber bands and stationers' rubber generally, and it has been the sole sales agency in this country for A. W. Faber and associated brands of pencils. Since 1911 the American branch of the A. W. Faber Co. has been conducted by Henry Fera, Jr., as attorney-in-fact and general manager. About 70 per cent of the product of this concern at the present time is used by the United States Government.

GERMAN BUSINESS IN AMERICA TAKEN OVER.

For many years Germany has been attempting to gain a predominating place in American business, and it has been discovered that she had succeeded to a surprising degree. The German companies doing business in America exceed one hundred, and German investment in other companies probably includes several hundred. The Alien Property Custodian is taking over these German interests in America and it is proposed to sell them at auction to bona fide American citizens and to turn over the money realized to the enemy trust fund.

Among the firms allied to the rubber trade which are affected are the chemical houses of Roesslacher, Hasslacher Co., and the Heyden Chemical Works, both of which are located in New York City. The enemy-owned stock of George Borgfeldt & Co., importers of rubber toys, New York City, has been taken over by the alien Property Custodian, as has also that of the Werner & Pfleiderer Co., manufacturers of rubber machinery, Saginaw, Michigan. In the latter instance, a board of directors has been installed to represent the Alien Property Custodian, and also a supervisor, who will devote his entire time to the management of the business.

AN ARMY SLICKER LASTS 16 MONTHS.

The average minimum life of an army slicker is 16.23 months, on the basis of about 500 replies from quartermasters and organization supply officers in the various camps and cantonments reporting to the Acting Quartermaster General.

SERVICE NOTES AND PERSONALS.

Lieutenant Charles W. Everson, whose commission in the Signal Reserve Corps was announced in our issue of June 1, 1918, has been transferred to the Air Service (Aircraft Production) Division. He is identified with the Chicago office, 614 Consumers building. Lieutenant Everson is the vice-president of Everson & Reed Co., rubber stamp manufacturer, 88 Chambers street, New York City.

C. W. Carley, former assistant manager of the Sterling Tire Corp., Rutherford, New Jersey, at its Paterson branch, is a member of Battery A, 11th Battalion, Camp Jackson, Columbia, South Carolina.

P. J. Kerrigan, formerly in charge of traffic matters in the export office of the Sterling Tire Corp., Rutherford, New Jersey, is now with the United States Shipping Board, Hoboken, New Jersey.

Arthur H. Leavitt, Akron, Ohio, is now in the Motor Transport Corps in France. He trained at Plattsburgh in 1916 and received his commission as captain in January, 1917. At the beginning of the war, he was the first employe of The B. F. Goodrich Co. to enlist and was assigned for duty at Fort Sam Houston, Texas, where he remained three months, going from there to Chicago to serve as auxiliary officer in charge of motor transportation until he was ordered overseas in April, 1918. Captain Leavitt and his younger brother, Edward W., likewise employed by the Goodrich company, are sons of Percy W. Leavitt who has been with the Goodrich organization since 1880. Captain Leavitt is married and has one son.

CAPTAIN ARTHUR H. LEAVITT.

L. E. Warford resigned May 1, 1918, as advertising manager of the branch of The B. F. Goodrich Rubber Co. in Seattle, Washington, to enter the United States Military School of Aeronautics at Berkeley, California.

F. Marisch, the third member of the Power Rubber Co., 690 Van Ness avenue, San Francisco, California, distributor of Kelly-Springfield, Racine, and Goodyear tires, is a second lieutenant in No. 5 Wagon Company, 23d Regiment, United States Engineers, and is now in France.

The fifth supplementary military service list of The B. F. Goodrich Co. comprises 237 names, bringing the total number of former Goodrich employes with the colors up to 2,957.

Charles Piez, president of the Link-Belt Co., Chicago, Illinois, has been renamed general manager of the Emergency Fleet Corporation, from which post he resigned in title only when Charles M. Schwab was appointed director general. Meanwhile Mr. Piez has contined to be vice-president in charge of construction.

Miss Frances E. Silbaugh, who has had charge of first aid at The Federal Rubber Co.'s plant at Cudahy, Wisconsin, for the last two years, has joined the forces as a Red Cross nurse and is now stationed at Bordeaux, France, with Hospital Unit No. 22. Previous to her departure for France she was stationed at Madison Square, New York City, for several weeks and had the opportunity of marching in the Red Cross parade on May 26. Miss Silbaugh is a native of Wisconsin.

FRANCES E. SILBAUGH.

Miss Mary Cartin Kelly, formerly private secretary to Paul Loewenthal, of the Loewenthal Co., dealer in waste rubber and metals, 23 Heyward street, Brooklyn, New York, in a competition with 2,000 other volunteers, won the distinction of being the first marinette in the country. She now ranks as a private. Miss Kelly has been in the employ of the Loewenthal company for eleven years.

Joseph White, former manager of the Sterling Tire Corp., in Brooklyn, New York, has entered the service of the United States and is in France.

Anthony Parber, former manager of the Sterling Tire Corp. in Cleveland, Ohio, has entered the Army.

Colonel Guy E. Tripp, former chairman of the board of directors of the Westinghouse Electric & Manufacturing Co., who has been in charge of the Production Division of the Ordnance Department, has been nominated by President Wilson for advancement to the rank of brigadier-general.

Morgan Lasher, of the United States Marines, formerly a clerk for the Goodyear Tire & Rubber Co., Akron, Ohio, has been cited in official dispatches for conspicuous bravery in the fighting around Belleau Wood, when he volunteered to recover a supply of rockets that had fallen into the hands of the enemy and succeeded in creeping back to the American lines with the rockets in his possession.

WILLIAM H. YULE.

W. H. Yule, who has managed the mechanical goods sales of The B. F. Goodrich Co., Akron, Ohio, for the past two and one-half years, has been given direct charge of the corporation's relations with the Government in the manufacture of gas masks and balloons. This is in accord with the purpose of the company to put its resources at the disposal of the Government. It will establish a direct point of contact and eliminate the confusion liable to arise in dealing with a large and complex organization.

Major Frank R. Bacon is now identified with the Cannon Section of the Production Division of the Ordnance Department, Washington, District of Columbia. Major Bacon is president of the Cutler-Hammer Manufacturing Co., Milwaukee, Wisconsin, which makes electric controlling devices.

Earl Lascalleet, formerly with the Baltimore, Maryland, branch of the Sterling Tire Corp., is now gunner's mate on the U. S. S. *Massachusetts.*

MARTYRS TO THE CAUSE OF LIBERTY.

THE B. F. Goodrich Co., Akron, Ohio, will soon add another gold star to its service flag in honor of Thomas Hardman, of the Canadian Expeditionary Forces, who was killed in action June 25. Hardman had been employed by the Goodrich company for about two years, pervious to his enlistment on September 3, 1917, when he went to Canada and after training there until December he was sent overseas. He was a member of the Sons of St. George and was well known among Akron soccer players. Hardman was a cousin of Mrs. Thomas Hogarth and Peter Hardman of 120 Lods street. He is survived by both parents, two sisters, and one brother, all of whom live in Blackpool, England.

Lieutenant George P. Gustafson and J. F. Crist were also among the former Goodrich employes reported killed in France during the last three months.

Two former Goodyear employes, Sergeant Frank Addison Kline and Vito Girondo, were reported killed in action in France recently.

It is reported that Lieutenant A. J. Massan, who enlisted at Vancouver in the 30th B. C. Horse on August 4, 1914, was killed in action in France several months ago. He was a former employe of the Canadian Consolidated Rubber Co., Limited, at Victoria, British Columbia, but his home was in Edinburgh, Scotland, where he is survived by his mother and three sisters.

FEDERAL GIRLS ADOPT FRENCH ORPHAN.

The office girls of The Federal Rubber Co., Cudahy, Wisconsin, have contributed $36.50 for the support of a little French orphan, and have been assigned five-year-old Marcelle Fillon, of Orleans, France.

LETTER FROM THE FRONT

FROM A YOUNG ARTILLERYMAN IN FRANCE.

SOMEWHERE IN FRANCE.

DEAR ———:

To-night it's rather gloomy, due to the weather, I guess. It has rained now, off and on, for the last few days, and there's a very heavy mist hanging over us. The mud is fierce, worse than it has ever been. I never saw the beat of it. In some places it is anywhere from four to six inches deep.

We've spent most of the day cleaning up harness. It sure needed it as it was covered with mud. Well, we soaped it up well, and it looks fine, but it will be just as bad as ever the next time we go out. It is pretty tough grooming horses these days, as they are always caked from head to foot with mud. It seems almost a useless job, but it has to be done every day just the same.

Yesterday was a big day. We were all compelled to take a bath. They marched us, about thirty at a time, into a place, and every two men were given a pail of hot water. We went to it in great shape as we sure needed it. I don't know how long ago some of us had one—some little time, anyway. After we had finished with the hot water, we had to get under the hose. An officer stood there with the hose, first inspecting everyone to see that he was perfectly clean. If not, he had to go back and scrub some more. Believe me, that officer didn't use any mercy at all; you were compelled to stand under that hose for quite a few moments. That cold water certainly put the finishing touches on. I never knew before how much difference a wash made. We looked like another bunch of fellows. Well, I feel clean once more. I put on all clean underwear, so I won't have to worry for some time to come. After this letter I think I'll visit the barber. He is busy at the present time in one corner of the barrack. I don't know how many are waiting, but there is usually quite a crowd, as evenings are about the only chance we have to get cleaned up.

We haven't received any mail now for some time, and naturally we are anxiously looking forward for the next bunch to arrive. We do like to get the news from home. It may seem queer to you when I say that you really know more about how the war is going on than we do ourselves. We don't get very much of the news. We are sort of in a little world all by ourselves. A Frenchman comes around every morning or so selling "The Daily Mail" and the "Chicago Tribune," but those are the only papers we get on the proper date. Those from home are, of course, a month or more old, but we sure do enjoy reading them, and learn more from them than we do from those printed on this side. I imagine that papers over here are censored like everything else.

It is extremely interesting to hear a Frenchman tell of his experiences in the trenches and the lucky scrapes he's been through. Of course, I don't understand very much French, but there are quite a few French fellows in the battery who can understand and talk to them, and they tell us in turn what they say, so that we are "all fed up" on what we are going up against sooner or later.

Well, I don't know of much else I can tell you about. We are getting good food. Still have sugar in our coffee. Probably better off than you folks are. Most every morning we have bacon, and usually rice with syrup. We have stew pretty often at noon times. We have had all the 57 varieties of this, I guess, but it's good stuff. We are getting United States beef now—much better than the French beef. The French use their cows for working purposes. Probably that is why the meat is so tough.

Well, to-night I have something to look forward to. We don't have to get up until seven to-morrow morning, as it is Sunday. If I was home it would perhaps be 11 o'clock before I got up. Never mind, don't worry. I'll be home some day.

As ever,

JOHN.

LETTER FROM THE MEXICAN BORDER.

From a Private on the Mexican Border Whom a Member of The India Rubber World Staff is Godmothering.

SOMEWHERE ON THE RIO GRANDE.

DEAR Friend:

Received your welcome letter and also the package. I don't know how I'm ever going to repay you for your kindness. In behalf of the other boys of the bridge guard I want to thank you most heartily for your contribution to our comfort.

We boys were relieved from bridge guard for at least a month, and believe me we were glad to get back home, as the soldier hereabouts calls it, for that bridge guard is sure a torture. It's like waiting for something that will never come to pass. If old Pancho Villa, or some German spy would make us a visit, it would somewhat relieve the monotony and make us feel as if we were "doing our bit," so to speak.

The sweater is fine and very comfortable. The books are interesting and I'll pass them around to the boys when I'm through with them, as that is our custom. The fountain pen is a dandy and I'm writing this letter with it.

You asked why I'm not in the cavalry. I tried right hard to enlist in that branch of the service, but I was too tall. You see, I'm 6 feet 1½ inches and the average for the cavalry is 5 feet 10 inches. I'm practicing with my lariat again and hope I get a chance to rope the Kaiser.

To-day we raised Old Glory on the new flagpole and it was sure beautiful. You can't realize how proud I am to soldier for that dear old flag.

The ——— Cavalry will be leaving for "over there" in the near future and I expect the ——— Infantry will be going too. I only hope so. Our chaplain told us the other evening that they could send all the National Army men they wanted to, but it would take the old ——— Cavalry and ——— Infantry to "can the Kaiser." And he must be right, as he's the oldest chaplain in the service.

To-morrow the Army ghost walks; it's pay-day. It doesn't do most of us much good, though, as we've bought Liberty Bonds and taken out government insurance, but we're all in to do our "bit." Anyhow, that's the way I feel about it, and believe me, it's a good feeling, too.

I'm writing from the "Y," as we call the Y. M. C. A. We have a band concert every Tuesday and Thursday and movies every other night except Sunday, when we have church.

The baseball season has opened again. We won the first game of the season, beating the opposing team by 10 to 1. That looks as though we'll be pretty hard to beat. First base is the position I play.

Sincerely,

———.

Some one has said: "If one of our boys hesitated as long in going over the top as some people do in buying Liberty bonds or War Savings Stamps, he would be court-martialed and shot for cowardice."

Report of the Tire and Rim Division of the S. A. E.[1]

PROGRESS REPORT ON AIRPLANE LANDING-WHEELS.

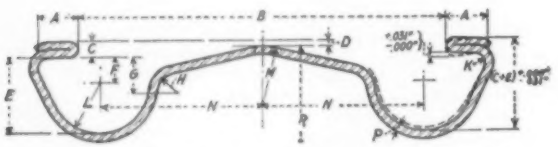
TIRES AND RIMS.—This subject is reported as one of progress only. The data below were worked out by a subcommittee of the Aeronautic Division. The Tire and Rim division will check over these data, work in cooperation with Professor McGregor for the United States Government, and submit recommendations later.

The specification, as submitted below, covers the general requirements of tires and tubes for airplane landing-wheels, it being the aim to confine the number of sizes to as few as possible. Larger sizes than listed below will probably be required, and the proposed specification will be extended to include these sizes as soon as demanded.

All tires and tubes shall be free from defective material and workmanship, and shall conform to the following general construction, limits and tests:

Tires shall be of the clincher type, smooth tread, constructed of two or more cord plies of long-staple cotton, so arranged that an equal number of plies run in each diagonal direction across the tire. Each ply shall be separated from the adjoining ply by rubber compound. Enough rubber compound must be put on side wall to insure ample protection of tire body. The tread stock shall have a minimum specific gravity of 1.30. The inside of tires need not be painted.

Tire beads shall be constructed so as to insure against pinching and fit properly the rim contours shown in accompanying drawing and table.



CROSS-SECTION OF LANDING-WHEEL RIM.

The dimensions and weights of the finished tires shall be according to the following table and within the limits specified:

TIRE DIMENSIONS AND WEIGHTS.

	Size.		Dimensions. Thickness.		Weights.[2]	
	Tire.[3]	Rim No.	Tread, Min.	Side-wall, Max.	Max.	Min.
Millimeters	75/700	U_8	1.588	0.794	2.410 kg.	2.123 kg.
Inches (approx.)...	28x3		1/16	1/32	5 lb. 5 oz.	4 lb. 11 oz.
Millimeters	100/700	Z_8	2.381	1.191	4.137 kg.	3.851 kg.
Inches (approx.)...	28x4		3/32	3/64	9 lb. 2 oz.	8 lb. 8 oz.
Millimeters	125/750	Z_8	2.381	1.191	4.989 kg.	4.650 kg.
Inches (approx.)...	30x5		3/32	3/64	11 lb. 0 oz.	10 lb. 4 oz.
Millimeters	150/800	Z_8	3.175	1.191	6.002 kg.	5.615 kg.
Inches (approx.)...	32x6		1/8	3/64	13 lb. 4 oz.	20 lb. 6 oz.

MARKING.—Each tire shall be branded with the manufacturer's name, size, serial number, and rim number the tire is intended to fit.

TUBE DIMENSIONS AND WEIGHTS.

	Tire Size.	Mandrel. Diam., Min.	Wall. Thickness, Min.	Weight[4] Approx.	Specific Gravity, Max.
Millimeters	75/700	47.63	1.194	0.4536 gk.	1.25
Inches (approx.)....	28x3	1⅞	0.047	1 lb. 0 oz.	1.25
Millimeters	100/700	60.33	1.372	0.6804 kg.	1.25
Inches (approx.)....	28x4	2⅜	0.054	1 lb. 8 oz.	1.25
Millimeters	125/750	76.20	1.575	0.9355 kg.	1.25
Inches (approx.)....	30x5	3	0.062	2 lb. 1 oz.	1.25
Millimeters	150/800	82.55	1.575	1.1911 kg.	1.25
Inches (approx.)....	32x6	3¼	0.062	2 lb. 10 oz.	1.25

[1] Continued from THE INDIA RUBBER WORLD, August 1, 1918.

[2] Section widths and tire dimensions when inflated 50 pounds per square inch shall not vary more than four per cent over or more than two per cent under nominal specified tire sizes.

[3] Weight without flap.

[4] It is suggested that the maximum and minimum weights be specified for tubes as well as for the tires.

TUBES.—Tubes shall be constructed of rubber compound to dimensions, weights and tolerance given in table, and shall withstand physical tests specified.

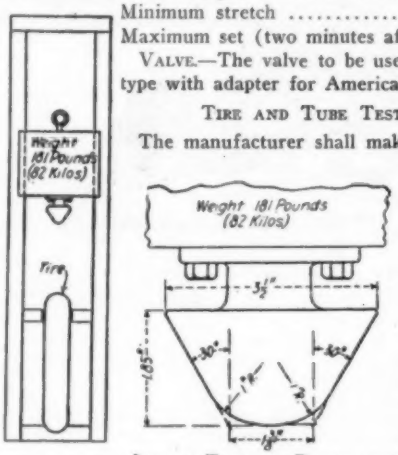
TUBE TESTS.—Tubes must withstand the water test mentioned under tire test, and shall have the following physical properties:

Minimum tensile strength.....1500 pounds
Minimum stretch 600%
Maximum set (two minutes after rupture).... 25%

VALVE.—The valve to be used will be of the bent type with adapter for American and foreign pumps.

TIRE AND TUBE TESTS COMBINED.

The manufacturer shall make a sufficient number of tests on the tires and tubes coming through to satisfy himself that the product satisfies the requirements of this specification.



IMPACT TEST FOR PNEUMATIC TIRES.

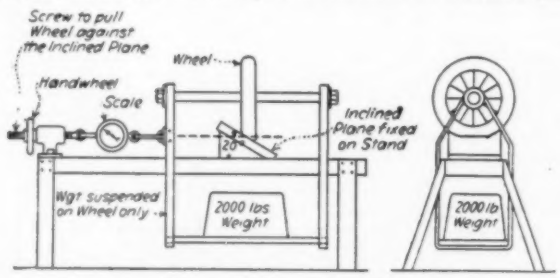
General arrangement of apparatus shown on left. Detail of contact head shown on right.

IMPACT TEST.—The tire is mounted with the tube on a special rim of standard contour that will withstand the pressures given in the table. The tube is inflated with air and maintained at a pressure of 150 pounds per square inch. In this condition the tire must withstand a blow delivered on the tread by a weight of 181 pounds (82 kilograms), having a contact surface as indicated in the diagram, and falling through the distance indicated in the following table:

Tire Size, Mm.	Drop (181 Pounds Weight). In Inches.	In Mm.
75/700	45	1143
100/700	55	1397
125/750	55	1397
150/800	55	1397

WATER-PRESSURE TEST.—All airplane tires from 75/700 to 150/800 millimeter inclusive, when mounted on special rim, standard contour, shall withstand a water test of 200 pounds, pressure not to be raised at a rate exceeding 50 pounds per minute.

SIDE-THRUST TEST.—All airplane tires from 75/700 to 150/800 millimeters inclusive, when mounted on standard rims,



AIRPLANE LANDING WHEEL SIDE-THRUST TEST.

The center line of the screw (line of pull) should come at the point of contact of the tire with the inclined plane.

inflated to 50 pounds air pressure, and loaded with a dead weight of 2000 pounds, shall withstand 1800 pounds lateral stress against a surface placed at an angle of twenty degrees with the hori-

zontal, as shown in the illustration, without pulling off the rim.

LANDING-WHEEL RIMS.—The accompanying table shows the proposed landing-wheel rim dimensions. Additional inspection requirements, besides those indicated by the table, are that the rim out-of-flat shall not exceed 1/16 inch when free on surface plate; rim tolerance for out-of-round is 3/32 inch; buckled rims are covered by the surface-plate inspection and tolerance limits; rims must be free from defective welds.

TABLES OF AIRPLANE LANDING-WHEEL RIM DIMENSIONS.

In Inches.

Size. Rim	Tire Size. Mm.	Tire Size. (Approx.) Inches.	A −0.000 +0.031	B ±0.046	C −0.006 +0.021	D ±0.016	E	F	G	Radii. H	Radii. K	Radii. L	Radii. M	N	P	Diam. R	Circum.[a] (π R.)
U_2	75/700	28x3	13/64	1 39/64	0.104	0.049	27/64	13/64	0.159	1/8	0.039	7/32	19/64	45/64	0.052	21 25/64	67.201
U_3	60/575 75/600	22x2½ 24x3	13/64	1 39/64	0.104	0.049	27/64	13/64	0.159	1/8	0.039	7/32	19/64	45/64	0.052	18 1/64	56.598
Z_2	100/700 125/750	28x4 30x5	5/16	2 11/16	0.104	0.042	9/16	3/16	0.266	3/16	5/64	3/8	1/2	1 3/16	0.078	20 5/32	63.323
Z_3	150/800	32x6	5/16	2 11/16	0.144	0.082	9/16	3/16	0.266	3/16	5/64	3/8	1/2	1 3/16	0.094	20 5/32	63.323

[a]Tolerance from nominal after lacing +0.000 to —5/64 in.

In Millimeters.

Rim Size.	Tire Size. Mm.	Tire Size. Inches. (Approx.)	A +0.787 −0.000	B ±1.168	C +0.533 −0.152	D ±0.406	E	F	G	Radii. H	Radii. K	Radii. L	Radii. M	N	P	Diam. R	Circum.[a] (π R.)
U_2	75/700	28x3	5.156	40.868	2.642	1.245	10.719	5.156	4.039	3.175	0.991	5.563	7.544	17.856	1.321	543.330	1706.903
U_3	60/575 75/600	23x2½ 24x3	5.156	40.868	2.642	1.245	10.719	5.156	4.039	3.175	0.991	5.563	7.544	17.856	1.321	457.606	1437.587
Z_2	125/750 100/700	30x5 28x4	7.950	68.273	2.642	1.067	14.300	4.775	6.756	4.775	1.981	9.525	12.700	30.174	1.981	511.962	1603.402
Z_3	150/800	32x6	7.950	68.273	3.658	2.083	14.300	4.775	6.756	4.775	1.981	9.525	12.700	30.174	2.388	511.962	1603.402

[a]Tolerance from nominal after lacing +0.000 to —1.981 mm.

THE MANUFACTURE OF PUMP VALVES.

PUMP valves are usually classed among the more common products of the rubber shop, as they are made largely from inexpensive compounds and require little skill in their production. The result is seen in the very large number of valves which are rough in appearance, varying in thickness and bearing, in a greater or less degree, marks of the plates used in press work. Many factories use a plate for each size of valve, holding from six to eighteen rings, with removable centers or pins. In time these plates become battered and, of course, transfer their markings to the surface of the molded valve. The use of such plates, however, is frequently continued, owing to expense of planing down in the machine shop. As a matter of fact, a machined plate made to hold rings of a certain size is unnecessary. This expense and the expense of future repairs and remachining, can be saved by using the rings alone between sheets of polished Russia iron. Valves cured in this manner have a beautiful, smooth surface, and the rings are not so liable to injury as when used in a plate. Under this method the hole in the valve would have to be cut out on a hand lathe. If a workman is not provided with a "universal chuck," he will simply screw a pine block to the lathe head and with a chisel remove the wood to form a seat that will exactly and firmly hold the valve while the hole is being cut. A good man will cut holes in 500 valves in ten hours.

A compound suitable for a valve is usually delivered to the press room in one of two forms: direct from the mill room in a slab more or less roughly turned out, but approximating the thickness required in the valve, or in the form of thin sheets from the calender. When in the latter form, the valve stock has to be "built up" by hand, the plies, or layers, being cemented and hand-rolled together. This gives better results than in the rough slab form, especially in expensive stocks, for the reason that a more compact body of stock is secured, with a consequent elimination of blisters and surface defects. The uncured stock should be built up slightly thicker than required, cut to exact size in a gasket cutter, or with a die, weighed, and trimmed to weight if necessary. Care must be used that the uncured waste does not exceed 35 per cent nor the cured waste 2 per cent. Some shops lose sight of the large quantities of uncured stock that are returned to the mill room for "warming over," or reslabbing, that could and should have been used up in the first handling had care been used by the workmen. If a polished surface is desired for a valve, it can be easily and quickly secured at the time the hole is cut and before removing from the lathe, by means of fine emery cloth, or a block of soft wood held firmly against the revolving surface.

A. F. OSTERLOH.

MANY of our big American corporations have among their executives, men who have climbed from the bottom rung of the ladder to the top, by sheer force of ability and resourcefulness; men who fought for their concerns in the lean days when they were battling for recognition. Such a man is A. F. Osterloh, secretary of the Goodyear Tire & Rubber Co., Akron, Ohio, who has lately completed fifteen years of faithful service with that company.

A. F. OSTERLOH.

Mr. Osterloh joined the ranks of the company only four years after its organization, in 1902, when it was struggling for " a place in the sun." He has been intimately associated with all the ups and downs of the company ever since the early days, and his career has been a long story of hard work and constant application.

Starting as a salesman in the Chicago territory, he was subsequently made branch manager and then western sales division manager. His success as a merchandiser brought him promotion to the office of assistant secretary and assistant sales manager of the company. About two years ago he was elected secretary.

During his fifteen years of continuous service he has always been one of the "boys," as popular with the rank and file as with the officials of the company. His rise from salesman to secretary, while yet a young man, is practical evidence of the opportunities that American industry offers to young men of ability and determination.

What the Rubber Chemists Are Doing.

COMPARATIVE EFFECT OF ORGANIC AND INORGANIC ACCELERATORS IN VULCANIZED RUBBER.

THE following paper by Dr. Henry P. Stevens, slightly condensed, is given as published in the "Journal of the Society of Chemical Industry," May 31, 1918:

Various statements have been made regarding the comparative accelerating effect of inorganic accelerators, such as litharge and magnesia, and the more modern organic accelerators; that relatively large quantities of the former are necessary to produce an accelerating effect comparable with that obtained by means of small quantities of the latter; also that the physical properties of the rubber vulcanized with inorganic accelerators differ from those obtained with organic accelerators; and it appears to be generally held that, of the two inorganic accelerators, litharge is more powerful than magnesia.

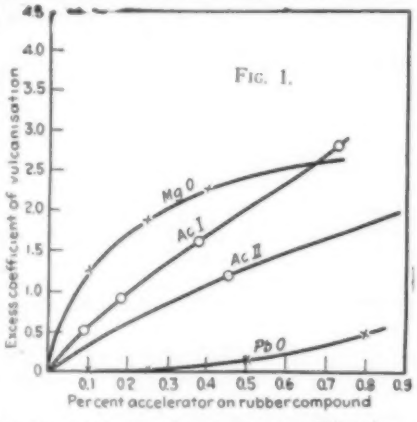


FIG. 1.

Experience leading Dr. Stevens to question some of these statements, he gives the results of a number of vulcanizing experiments with 90 parts of ordinary pale plantation crêpe rubber, 10 parts of sulphur, and small quantities of the following accelerators: (1) litharge, (2) magnesia, (3) isonitrosodimethylaniline (Ac. I), (4) a basic amino derivative (Ac. II). All the compounds were vulcanized in steam for one hour at 35 pounds pressure (138 degrees C.). After prolonged extraction (40 hours) with acetone the remaining sulphur was estimated. The combined sulphur is given, calculated as a percentage on the raw rubber taken (coefficient of vulcanization). Rings were cut from the vulcanized compound and the load required to elongate the specimen to nine times its original length was determined. The figures are the average of tests on five rings.

(1) LITHARGE.

Per Cent Accelerator.	Coefficient of Vulcanization.	Load, Grams per Sq. Mm.
Nil	1.26	237
0.10	1.25	244
0.25	1.27	248
0.50	1.37	282
0.80	1.75	370

(2) MAGNESIA.

Nil	1.40	152
0.10	2.66	390
0.25	3.31	755
0.40	3.68	1,120
0.75	4.08	1,320

(3) ISONITROSODIMETHYLANILINE.

Nil	1.40	152
0.091	1.90	320
0.182	2.27	430
0.364	2.97	827
0.726	4.24	1,675

(4) BASIC AMINO DERIVATIVE.

Nil	1.40	...
0.45	2.62	...
0.90	3.42	...

The relationship between the amount of accelerator used and the coefficient is shown in Fig. 1. The curves start at zero, obtained by subtracting the natural coefficient of the rubber from that found after adding the accelerator. The conclusions may be summarized as follows:

Of the inorganic accelerators, magnesia is much more powerful than litharge, particularly in small amounts, disproving the claim to the contrary. Litharge acts in a two-fold capacity, first as an accelerator and secondly by reducing the sulphur available for vulcanization. The form of the curves in Figure 1 leads one to expect that in larger proportions litharge would tend to approach magnesia in accelerating power. These conclusions do not necessarily hold for dry-heat vulcanizing.

The curve for magnesia is convex to the ordinate, that for litharge concave. The action of litharge is frequently complicated by the withdrawal of part of the sulphur which reacts with the lead. This, however, does not affect the present experiments, owing to the large proportion of sulphur and small proportion of litharge in the "mixings."

Magnesium oxide is more powerful than the organic accelerator Ac. II (basic amino derivative) in all proportions up to at least one per cent of accelerator on the rubber. It is also more powerful than the organic accelerator Ac. I. (isonitrosodimethylaniline) in proportions up to about 0.6 per cent. The graphs for the organic accelerators are almost straight lines in contrast to the strongly curved graph for the magnesia. Therefore, the effect of increasing the proportion of the organic accelerators is similar in both cases but different from that of the magnesia, which is also different from that of the litharge.

Figure 2 gives the loads at a constant elongation after subtracting the load of the control for each. These figures define the position of the stress-strain curve, which has been used by some as an index of the degree or state of cure.

The graph for the organic accelerator is practically a straight line, as also is that for magnesia up to a certain point which corresponds to a co-efficient of vulcanization of about 3.7. It therefore appears that, when a magnesia compound is appreciably overcured, it becomes rapidly harder and less distensible the higher the co-efficient. This effect is not noted with the organic accelerator. The graph for the litharge is slightly curved and closely resembles that in Figure 1.

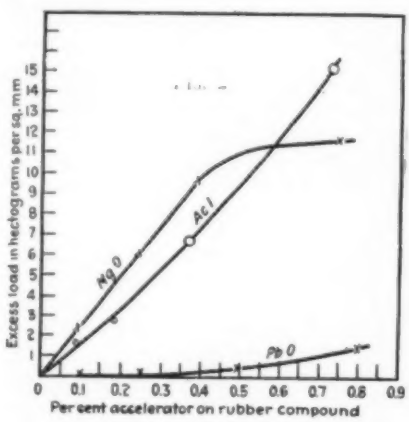
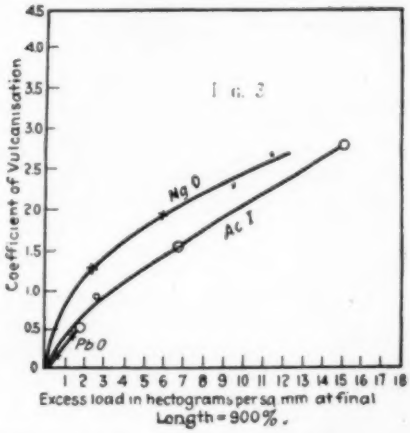


Figure 3 gives the coefficients plotted against the loads. The graphs for the organic accelerator and litharge compounds are only slightly curved, consequently we may conclude that the coefficient and load are approximately proportional within the limits of the experiment. The graph for the magnesia compound is appreciably curved, and the load increases more rapidly the higher the coefficient. It is therefore evident that with compounded rubbers, even those containing less than one per cent of mineral matter or organic accelerators, the load is seldom, if ever, exactly proportional to the coefficient, and consequently the estimation of the rate of cure cannot be safely based on the loads, that is to say, the stress-strain curves, without checking these against the coefficient of vulcanization. Even small quantities of quite inert ingredients appreciably affect the load corresponding to the same coefficient. Thus, in

some earlier experiments, it was shown that one-half of one per cent of zinc oxide in a rubber and sulphur mixing decreased the extension for a given load by about 11 per cent, while one-half of one per cent of talc increased the extension by about nine per cent. These changes were accompanied by little or no increase in the amount of combined sulphur. The experiments in this paper are confined to the effect of very small proportions of accelerators such as are used in practice in the case of the organic accelerators. Inorganic accelerators such as litharge and magnesia are often used in larger proportions, which cause a considerable modification in the properties of the vulcanized rubber, apart from the accelerating effect.



POROSITY IN VULCANIZED RUBBER.

The causes of external and internal porosity, encountered in both open-steam and mold-cured rubber articles, are discussed at length by G. van Iterson, Jr., in the "Communications of the Netherlands Government Institute for Advising the Rubber Trade and Rubber Industry, 1916."

Porosity is defined as the presence of a varying quantity of minute cavities not attributable to confined air included in working. Open-steam-cured articles show porous on the surface if condensation of vapor has been unprovided for. Internal porosity is possible with every rubber mixture and always results if the stock is under-vulcanized in direct steam and the steam allowed to escape very suddenly.

Conditions influencing porosity were investigated on a standard mixing of *Hevea* rubber and sulphur containing seven and one-half per cent of the latter. Molded soft rubber plates of this stock, five millimeters thick, designated A, B, C and D, were cured in open steam at three and one-half atmospheres for 5, 15, 60 and 120 minutes, respectively. A was very porous internally; B, less so; C was free from porosity, and D was also homogenous.

Internal porosity can only be prevented in vulcanite by raising the steam in the vulcanizer very slowly, preparatory to the cure, and reducing it with equal care at the end.

Porosity is frequently attributable to the presence of internal moisture, although it may also be due to excessive softening by overworking the rubber on mills and callenders, which impairs its curing quality. Under-vulcanization will also cause porosity, as noted in THE INDIA RUBBER WORLD, Vol. 54 (1916), page 469.

Vulcanization experiments on rubber molded under heavy pressure, heated in an oil bath, demonstrated that the presence of 0.2 to 0.3 per cent of moisture is sufficient to induce internal porosity. It is evident that this effect can be overcome by subjecting the rubber to external pressure exceeding that of the confined vapors in the heated rubber mixture.

A standard method of test has been arranged on this basis in which the necessary counter pressure on the rubber may be obtained otherwise than by evaporation of water. This method will be detailed later by the Institute in its discussion of simplified methods of testing crude rubber.

Whether a given rubber mixing results porous or non-porous when vulcanized, depends practically on the external pressure being in excess of the internal during the process of cooling. In rubber much undercured, the tensile is low and permanent set high and these conditions, with absence of pressure, favor formation of porousness. Certain additions to rubber mixings are effective preventatives of porosity, in part, because they combine chemically with moisture, and also because they exert an accelerating influence on the vulcanization reaction.

The practical solution of the problem of the non-porous cure of rubber goods by conducting the vulcanizing operation under excess pressure of air or non-oxidizing gases was patented in American practice some years ago, to the manifest advantage of the wearing quality of such goods as boots and shoes, and the avoidance of losses in manufacture.

GERMAN CHEMICAL INDUSTRY IN 1917.

The year 1917 was for the German chemical industry a period of intensive activity, far-reaching achievement and profitable enterprise, says the "Board of Trade Journal" in quoting the German press. Work was abundant, prices high and the profits therefore good. Works had to be enlarged and capital increased. Competition at home has been eliminated by agreement between the chemical works and the explosive group, and the chemical concerns have succeeded in financially consolidating themselves so thoroughly as to inspire confidence in a smooth transition to peace conditions. Apparently the production of synthetic rubber does not figure in this war-time activity, as no mention is made of it.

CHEMICAL PATENTS.

THE UNITED STATES.

METHOD OF REDUCING VOLUME OF LAMPBLACK.—Lampblack, or gas black, is reduced in volume for making printing ink or rubber compositions by a process consisting of making a solution or emulsion of an oleaginous substance in a liquid, and after mixing the lampblack or gas black with the liquid, completely evaporating the latter. (George C. Lewis, New York City. United States patent No. 1,263,082.)

RECLAIMING RUBBER.—Product and process of reclaiming rubber consisting of submitting it to the action of tellurium in the presence of heat with or without pressure. (Frank A. Fahrenwald, Cleveland, Ohio. United States patent No. 1,269,168.)

INDURATED PRODUCT.—Leather impregnated with solidified condensite. (James McIntosh, Norristown, assignor to Diamond State Fibre Co., Bridgeport—both in Pennsylvania. United States patent No. 1,269,292.)

PLASTIC COMPOSITION.—A new composition of matter containing rubber and silicon monoxide. (Frank J. Tone, Niagara Falls, New York, United States patent No. 1,259,806.)

WATERPROOFING COMPOSITION FOR LEATHER ARTICLES.—A composition comprising grease 25 per cent, gum five per cent, wax 30 per cent, oil 35 per cent and rubber five per cent. (Harry C. Trenaman, Hamilton, Ontario, Canada, United States patent No. 1,269,658.

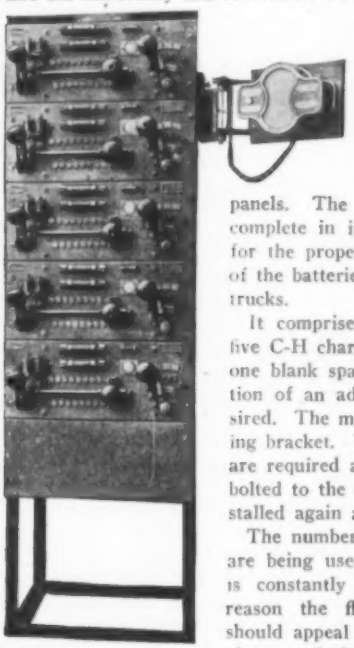
PROCESS OF COAGULATING LATEX AND PRODUCT THEREOF.—A process for treating latex which comprises adding thereto a reactive agent adapted to form an insoluble material in the latex, without accelerating its coagulation, and the addition of a vulcanizing agent. (Edward Mark Sclocum, Medan, Sumatra, Dutch East Indies, assignor to General Rubber Co., New York City, United States patent No. 1,270,887.)

TIRE-SEALING COMPOSITION.—A mixture for sealing air-inflated tires for prevention of escape of air through punctures, consisting of water, two quarts; granulated cork, four ounces; powdered cork, two ounces; talc, one pound; white lead, eight ounces, and gum arabic, two ounces. (Ernest Campbell, Calgary, Alberta, Canada, United States patent No. 1,271,015.)

New Machines and Appliances.

C-H BATTERY-CHARGING EQUIPMENT.

THE use of standardized filing cabinets and bookcases built on the sectional idea has become universal. This is so because of the ease with which extensions can be made and the uniformity and orderliness of such an equipment regardless of whether it was installed at one time or in sections at intervals.

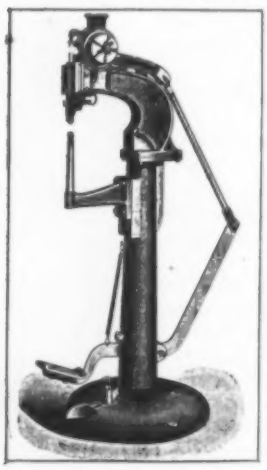


C-H universal section-type battery-charging apparatus consists of standardized units, panels, and sets of panels. The unit as here pictured is complete in itself, including everything for the proper charging and protection of the batteries of vehicles or industrial trucks.

It comprises a standard frame with five C-H charging sections in place and one blank space at bottom for installation of an additional section when desired. The meter is mounted on swinging bracket. When more than six units are required an additional panel can be bolted to the original one and units installed again as required.

The number of industrial trucks that are being used by the rubber industry is constantly increasing and for that reason the flexibility of this system should appeal on account of its convenience and simplicity to the production engineer who desires to keep his production moving at top speed. (The Cutler-Hammer Manufacturing Co., Milwaukee, Wisconsin.)

MACHINE FOR APPLYING SPLIT RIVETS TO TREADS.



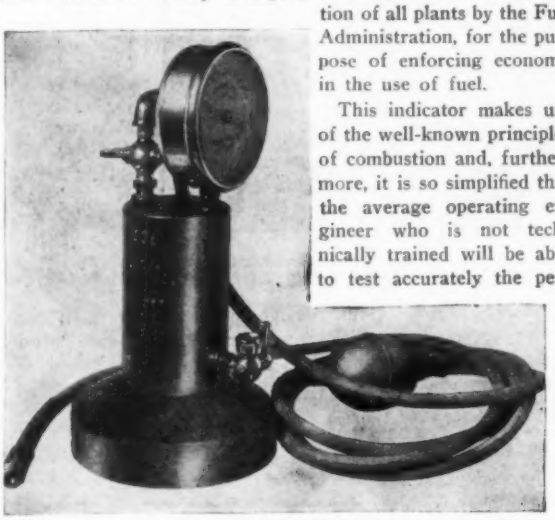
The use of metal studs and rivets in non-skid treads of both leather and rubber is a common practice in Europe. In this country treads of this particular type are now being used more generally and particularly for re-treading.

One type of non-skid stud that is largely used abroad is the bifurcated or split rivet, one that does not require holes being punched in the material before applying the rivets.

The machine here pictured is used for applying one type of split rivet in lengths from ¼ inch to ⅝ inch, inclusive. It is operated by foot-power, the work being held on the anvil by the operator. The rivets are contained in the hopper shown at the top of the machine and are automatically fed to the reciprocating head, where they are forced through the tread stock and riveted by the treadle action. (Edwin B. Stimpson Co., 70 Franklin avenue, Brooklyn, New York.)

THE DWIGHT CO_2 INDICATOR.

This instrument deals entirely with the subject of fuel combustion, the principles of which are the same for any furnace, regardless of the industry using it. At this time it is of particular interest to factory managers, on account of the investigation of all plants by the Fuel Administration, for the purpose of enforcing economy in the use of fuel.



This indicator makes use of the well-known principles of combustion and, furthermore, it is so simplified that the average operating engineer who is not technically trained will be able to test accurately the percentage of CO_2 (carbonic acid gas) in the flue-gases.

The machine consists of a hollow cast metal vessel, the lower part of which contains a caustic solution with a layer of mineral oil floating on the surface. Inlet and outlet valves for flue-gases are provided and also a gage especially calibrated to read directly the percentage of CO_2.

In operation, the sample of gas is pumped from the last pass of the furnace through the instrument to clean out any air that may be inside. After a representative sample is flowing, both valves are closed and a certain volume of the sample is trapped in the interior of the machine. The entire instrument is then shaken back and forth a few times to mix the oil with the caustic and allow the latter to splash through the gas, thereby presenting the maximum surface of the liquid for absorption of the gas which is accomplished in the quickest possible time. The degree of vacuum produced by the absorption of CO_2 is indicated by the gage which reads the percentage of CO_2 in the flue-gas. (Dwight Manufacturing Co., 12-14 Jefferson St., Chicago, Illinois.)

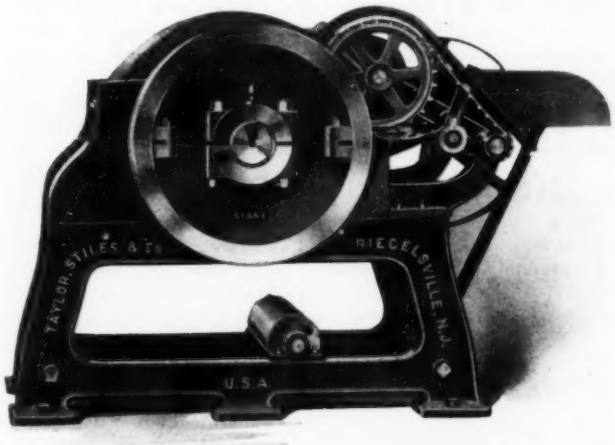
"GIANT" RUBBER SCRAP CUTTERS.

While these machines are well known to many users who are doubtless familiar with their operation and construction, the latest models, however, exhibit certain refinements in design and mechanical construction that are of interest.

There are two standard designs, No. 2, and No. 2 Special, the latter being the one shown in the accompanying illustration. They are of the same general design and construction, with the exception that the No. 2 Special is equipped with 24-inch split-balance pulley on each side in place of the 18-inch fast-and-loose pulley, and 22-inch balance wheel on the No. 2. The No. 2 Special also has steel close wedge bolt type knife cylinder in place of the cast iron cylinder in No. 2.

These machines are used for cutting up rubber scrap for reclaiming preparatory to feeding to the cracker or grinder, resulting in a saving of both power and the time in the cracker, and also getting rid of a great deal of dirt. The No. 2 handles

successfully every class of rubber scrap up to the heaviest pneumatic tires. Where very heavy pneumatic tires are cut exclu-

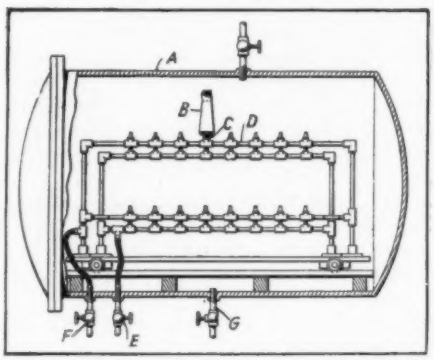


sively, the No. 2 Special is used as the steel knife cylinder and extra balance in the pulleys give greater strength and efficiency. (Taylor, Stiles & Co., Riegelsville, New Jersey.)

MACHINERY PATENTS.

DEVICE FOR OPEN STEAM PRESSURE CURE OF RUBBER FOOTWEAR.

STEAM is one of the most effective vulcanizing mediums because it rapidly conducts the heat to the articles under cure, and also it exerts no oxidizing action on the rubber. Hitherto, rubber footwear has not been vulcanized in an atmosphere of steam because the relatively cold surfaces of the goods condense some of the steam upon them, resulting in a spotted surface effect.



An atmosphere of steam is utilized as a vulcanizing medium in the manufacture of rubber boots and shoes by the device here illustrated.

The apparatus arranged for the vulcanization of a rubber boot consists of an ordinary steam vulcanizer *A* containing special apparatus consisting of a two-piece hollow metal boot-tree *B* upon which the boot is built as usual. The tree is connected by special nipple *C* with parallel systems of steam-circulating piping forming a pipe rack *D* mounted on a truck platform for convenience in handling the goods.

In operation, steam is admitted through valve *E*, and after interiorily heating the boot-tree passes off through valve *F*. Steam is thus allowed to circulate through the system until the boots upon the trees are heated sufficiently to prevent the condensation of the steam that subsequently is applied to the exterior of the goods. The interior circulation is then discontinued and steam for curing is admitted to the vulcanizer through the pipe *G*, and its circulation continued till vulcanization is finished. (Charles E. Bradley, assignor to Mishawaka Woolen Co., both of Mishawaka, Indiana, United States patent No. 1,271,843.)

OTHER MACHINERY PATENTS.

THE UNITED KINGDOM.

NO. 1,269,229. Apparatus and method for manufacturing tires, hose, etc. M. Smith, Passaic, New Jersey.

1,269,529. Portable vulcanizer. B. I. Malouf, Salt Lake City, Utah.

1,270,009. Ball-winding machine. H. Z. Cobb, Winchester, Massachusetts, assignor to Revere Rubber Co., Providence, Rhode Island.

1,270,038. Gasket-trimming device. A. C. V. Malm and F. H. Poorman, assignors to The Malm Machine Co.—all of Dayton, Ohio.

1,270,154. Tire vulcanizer. C. B. Heim, Marco, Indiana.

1,270,380. Machine and method for applying rubber treads to pneumatic tires. F. B. Converse, Akron, Ohio, assignor to The B. F. Goodrich Co., New York City.

1,270,459. Tire-bead trimming machine. R. L. Taft, assignor to the Hartford Rubber Works Co.—both of Hartford, Connecticut.

1,270,604. Apparatus for making inner tubes for tires. H. Dech, assignor to Mercer Tire Co.—both of Trenton, New Jersey.

1,270,895. Machine for applying a layer of rubber to a tire rim. W. C. Stevens, Summit, assignor to the Firestone Tire & Rubber Co., Akron—both in Ohio.

1,271,055. Vulcanizer. J. Michel, Philadelphia, Pennsylvania.

1,271,307. Rubber-shoe press. J. R. Gammeter, Akron, Ohio, assignor to The B. F. Goodrich Co., New York City.

1,272,555. Tire-building machine. W. J. Steinle, Elmhurst Heights, New York, assignor to the Rubber Regenerating Co., Mishawaka, Indiana.

1,273,071. Tire-making machine. C. Kuentzel, assignor to The Republic Rubber Co.—both of Youngstown, Ohio.

1,273,112. Apparatus for exhausting the interior of rubber articles. C. J. Randall, assignor to The Goodyear's Metallic Rubber Shoe Co.—both of Naugatuck, Connecticut.

1,273,526. Trimming machine. E. Nall, assignor to The Goodyear Tire & Rubber Co.—both of Akron, Ohio.

THE DOMINION OF CANADA.

183,495. Separating device for rubber mills. The Canadian Consolidated Rubber Co., Limited, Montreal, Quebec, Canada, assignee of J. J. Shea, Hartford, Connecticut, U. S. A.

THEUNITED KINGDOM.

115,338 Device for measuring tension of fabrics. British Emaillitte Co., 5 Hythe Road, Cumberland Park, Willesden, and E. Twyman, 75A Camden Road—both in London.

115,851. Electric repair vulcanizer for tires and tubes. S. le F. Varvel, 18 Bridge street, Sydney, Australia.

PROCESS PATENTS.

THE UNITED STATES.

NO. 1,269,420. Process of forming airplane structural elements by heating hard rubber treated sheet, etc. W. A. Gibbons, Flushing, New York, assignor to The Goodyear's India Rubber Glove Manufacturing Co., Naugatuck, Connecticut.

1,269,848. Process of making rubber balls. R. Parker, assignor to Parker, Stearns & Co.—both of Brooklyn, New York.

1,270,008. Method of making resilient balls and apparatus therefor. H. Z. Cobb, Winchester, Massachusetts, assignor to Revere Rubber Co., Providence, Rhode Island.

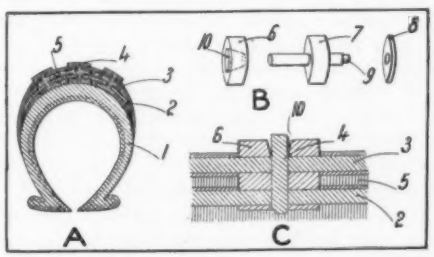
1,271,579. Process and apparatus for making vehicle-tires of rubber, etc. G. L. Kavanagh, Montreal, Quebec, Canada.

1,271,589. Process and apparatus for vulcanizing tires by electricity. W. D. Lauer, Chicago, Illinois.

MISCELLANEOUS PATENTS.

A FRENCH NON-SKID TIRE.

THE present invention consists of two leather bands held together by rubber solutions and double-headed metal studs, the whole being cemented to the casing of a pneumatic tire, forming the tread. Referring to illustration A, figure *1* is the tire and *2* and *3* are the leather bands supporting the studs *4*. The spaces between the bands and the tire are filled with rubber compound *5*.



The studs or rivets are composed of three distinct parts as shown at *B*, method of applying being shown at C. The lower band *2* is first placed on the axis of the rivet, then the ring *8* is put in place and the extremity *9* is flattened to hold the ring *8* in place. The band *3* is next slipped on and the head *6* fitted on the upper end of the rivet. The spaces between the leather

bands are then filled with rubber compound and the end of piece *4* is upset, filling the conical space *10* of the head *6*. (M. Pirot and J. Zimmermann. French patent No. 485,501.)

RUBBER BELTING AND STEAM HOSE TESTS.

THE American Society for Testing Materials held its annual meeting at Atlantic City, New Jersey, June 25-28, 1918, at which time Committee D-11 on Rubber Products submitted proposed tentative specifications on braided leader hose for use with pneumatic tools; rubber belting for power transmission, and steam hose. The first of these specifications was withdrawn by action of the committee and the society, while the others were accepted tentatively.

The physical properties and tests specified with relation to power belting and steam hose are quoted below in condensed form.

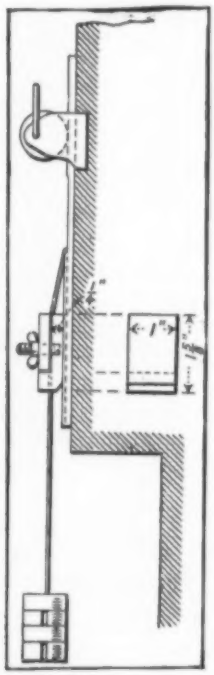


FIG. 1. APPARATUS FOR FRICTION TEST.

TESTS OF RUBBER BELTING FOR POWER TRANSMISSION.

From each lot of belting submitted for inspection a section 36 inches in length shall be cut and bench marks placed upon it 18 inches apart; it shall then be tested in a suitable tension-testing machine and under a load of 100 pounds per inch per ply shall not stretch more than five per cent.

The stretch test shall be continued without interruption to the breaking point, which shall occur at not less than 285 pounds, per inch per ply. The rate of separation of the jaws shall be approximately one-half inch per minute.

For belting of greater width than twelve inches the manufacturer shall supply for stretch and tension tests a 36-inch section of belting not more than twelve nor less than six inches in width, guaranteed to represent truly the composition of and the treatment given the belting supplied.

The adhesion or friction test between the plies shall be conducted in the following manner: for belting four inches and over in width transverse test specimens one inch in width, and for belting under four inches in width longitudinal test specimens one inch in width shall be prepared. The test specimen shall then be mounted in a vertical position against a vertical test board by means of an eccentric clamp at the upper end, as illustrated in Figure 1. Each ply shall be tested in turn by cutting away below the eccentric clamp and fastening the separated end in a movable clamp to which is suspended a weight which together with the clamp makes a total weight of 20 pounds. The rate of separation shall not exceed one inch per minute.

No test shall be made on the last three plies; but the friction between these shall be determined by using the reverse side of a fresh test specimen.

The thickness, width and length of the inner jaw of the movable clamp shall be as shown in Figure 1.

With each lot of belting the manufacturer shall be required to furnish for test, sample pieces eight inches in length, at least four inches in width and 1/16 inch thick, one piece consisting of cover compound (when rubber-covered belting has been specified) and the other consisting of beading[1] compound. These sample pieces shall be guaranteed to represent truly, in each case, the composition and degree of vulcanization of the article delivered.

When stretched from two inches (the original gage length) to seven inches for the cover, and from two inches to eight inches for the beading, the set or permanent elongation shall not exceed 25 per cent.

The tensile strength shall be not less than 800 pounds per square inch for the cover and 1,100 pounds per square inch for the beading.

The elongation shall be such that at the breaking load of the original two-inch gage length, the cover shall stretch to not less than nine inches, and the beading to not less than ten inches.

The beading shall also be tested as follows: a four-inch transverse section of belting shall be taken and beginning on the pulley or seamless side the plies shall be removed until only three remain intact. A line shall be drawn down the middle of the beading and then on each side of this line, and $\frac{5}{64}$ inch distant from it, two parallel lines shall be scribed. The section shall be inserted in a vise so that the jaws grip the sample coincident with two outer lines. The vice shall be tightened until the inner surfaces of the doubled sample just touch at the top of the vise, and shall be so held for ten minutes. Under this test the beading shall not crack or loosen in the seam.

TESTS OF STEAM HOSE.

A portion 18 inches long shall be cut from each length of hose, except in the case of 22 or 24 or 30-inch lengths, when one length from each 200 feet or less shall be taken for test. A portion 2½ inches long shall be cut from the test specimen and subjected to the friction tests specified. The remaining portion of the test specimen shall then have the exposed ends coated with a covering of rubber cement and be subjected to the digester test as specified below, after which another 2½-inch portion shall be cut from the test specimen and subjected to the friction tests specified after steaming.

The quality of the rubber friction binding the plies together shall be determined by suspending a 20-pound weight from the separated end of the duck of a one-inch test ring cut from the 2½-inch sample described above, the force being applied radially. The rate of separation shall not be greater than one inch per minute. The test shall extend for ten minutes when the size of hose permits.

The quality of the rubber friction after steaming shall be determined, as described above, on a one-inch test ring cut from the sample after it has been subjected to the digester test, except that a 15-pound weight shall be used in place of the 20-pound weight.

The friction between the inner tube and cotton duck shall be the same as that between the plies.

The tensile strength before steaming shall be not less than 600 pounds per square inch.

The tensile strength after steaming shall be not less than 450 pounds per square inch.

The elongation at the breaking load of the original two-inch gage length of both tube and cover shall be not less than four nor more than eight inches before steaming, and not less than two nor more than six inches after steaming.

The digester shall consist of a closed cylinder containing dry saturated steam at a pressure of 45 pounds per square inch. The test specimen shall be placed in the digester and shall remain there for 48 hours continuously. An examination of the section after being subjected to the heat of the steam should be made immediately after removal from the digester, and should disclose no blistering of the inner tube or loosening of the tube from the fabric. Tests after steaming prescribed in the specifications shall be made as soon as possible after the specimen has cooled for 24 hours.

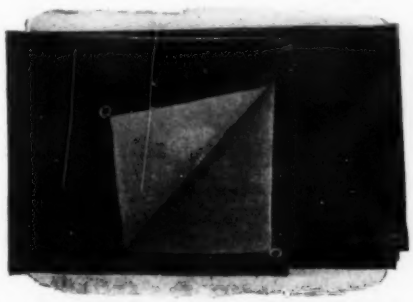
[1] The rubber cord used to fill the seam in the outside ply of frictioned canvas is what is meant by the term "beading."

New Goods and Specialties.

MORE CAMP COMFORTS.

THERE is no end to devising new utilities and adapting old ones to meet the needs of the soldier in camp or afield. Not so much thought seems to be expended on the requirements of the sailor, but for the soldier, both private and officer, many devices are offered which will add to convenience or comfort. A number of these are so practical and take up so little room that it is no wonder that the manufacturers and dealers are constantly on the alert for new ideas along this line.

The latest development of the hot-water bottle is shown here, and of course it's khaki. It is a very good, ordinary hot-water bottle otherwise, with hold-fast stopple attachment and the usual strap for holding it to be filled and eyelet in the bottom for hanging it up to drain. When empty it is perfectly flat and its improved shape permits it to be folded up compactly so as to fit into the small khaki case which comes with it and fastens with snap fasteners. Another comfort for camp life is a poncho blanket which is coated with rubber on the outside so as to shed rain or snow if it is ever necessary to sleep in the open in these elements. There is a slit for the neck, and ball and socket fasteners hold the poncho in place.



In addition there is the bed blanket of heavy sheeting, either single or double-coated with rubber, having the edges hemmed and fitted with grommets. The bed blankets are black or maroon, with either dull or luster finish. (Hodgman Rubber Co., Tuckahoe, New York.)

THE "NON-SKID" RUBBER HEEL.

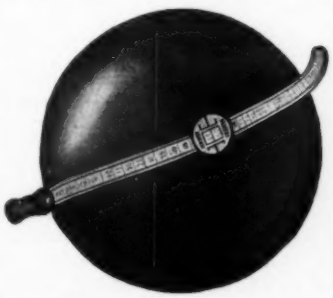
The application of the vacuum principle to rubber heels is something which various manufacturers are demonstrating in the newer types of heels. The one shown here is called the "Non-Skid." On the outer surface the depressed portions create vacuums, while the air-cushion on the inner concave surface greatly increases the resiliency of the heel. (Firestone Tire & Rubber Co., Firestone Park, Akron, Ohio.)

"BABY'S DELIGHT" NURSER.

Ordinarily one will search a long time before finding anything new in the line of nipples for babies' nursing-bottles. However, the one illustrated appears to be that "something new under the sun." Instead of fitting over the bottle, as most bottle-nipples do, there is an outwardly curving lip on the "Baby's Delight" that fits inside the bottle. This forms a vacuum which it is impossible to break without first inserting the finger or some other small object. Besides, the nipple itself is non-collapsible because it has a pneumatic cushion under which there is an air vent. It is claimed for this nipple that it will not slip off the bottle like those that fit outside, when the rubber becomes slightly aged. This nipple is patented and is now being put on the market. (Davol Rubber Co., Providence, Rhode Island.)

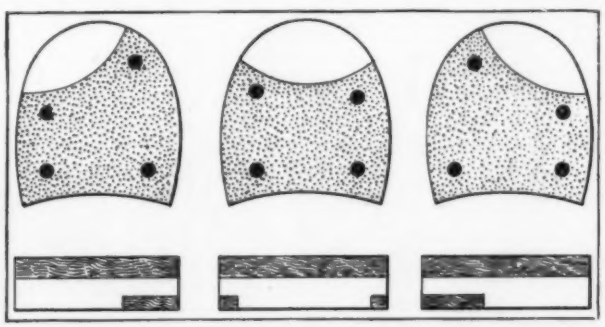
THE BENS "FUN AND HEALTH PRODUCER."

A new athletic device which is really but a modification of a well-loved toy of childhood, combines in its construction an inflatable balloon. To this is fastened a locking device, through which passes a graduated tape. When the balloon is inflated, the figures on the tape show the air capacity in cubic inches, so that a person can compare from time to time the amount of air expelled from the lungs. Each "Fun and Health Producer" has a wooden mouthpiece and comes packed in a sanitary envelope. (The S. J. Bens Manufacturing Corp., Herkimer, New York.)



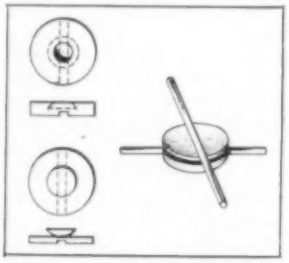
A HEEL OF LEATHER AND RUBBER.

In these days of conservation along all lines, when both rubber and leather are in great demand, a heel that combines the two or even uses leather substitute combined with rubber, is sure to attract attention. This patented heel has inserted a lift of rubber above the bottom lift of leather or leather substitute, but with an extension of the rubber to the striking surface at whatever point the individual wearer needs it most, whether at the back or either side. (Miss Jessie E. Price, 1045 Ingraham street, Los Angeles, California.)



FUSILAGE WIRE-PROTECTOR OF RUBBER.

The field of aviation opened up to the inventor a whole new range of possibilities, and the rubber manufacturer has not been slow to avail himself of the opportunity to furnish his share of fittings for the modern airplane. The ordinary person, unfamiliar with the mechanism of aircraft, is usually surprised when a statement is made to him of the many uses for rubber which have been developed in connection with airplane construction. Not the least of these is shown here—really an adaptation of the idea of the ball-and-socket fastener applied to a rubber washer. Both "ball" and "socket" have a groove across the flat surface, along which lies the fusilage wire. The little device is put at the exact point where the wires cross and the tension of the wires themselves holds it indefinitely in place, while at the same time it in turn holds the wires together, yet leaves them free to move with itself as the axis. It thus provides a solution for what was a serious problem—how to fasten the fusilage wires together flexibly and prevent them from wearing each other by friction, particularly when the planes struck the ground and the longerons straightened out, thereby changing the angles of the fusilage wires relatively to each other. Some of the largest manufacturers of airplanes now use this protector as standard equipment, although up to this time it has been developed and is being made by only one concern that manufactures rubber specialties. (Dural Rubber Corp., Flemington, New Jersey.)

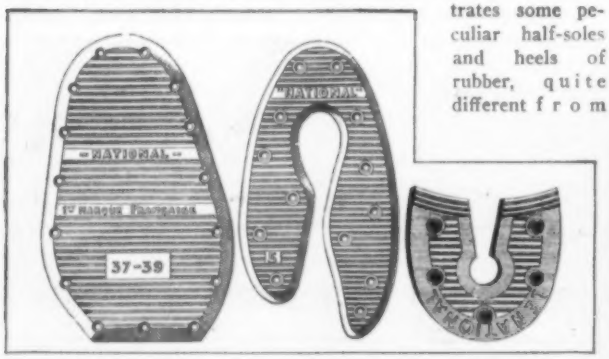


A MASSAGE BRUSH FOR THE SOLDIER.

A tiny massage brush that can be tucked into a very small space has been devised for the soldier, as illustrated. The handle and back are of metal, while the brush itself is composed of a number of small vacuum-cup rubber bristles of different sizes, the larger ones being nearer the handle. (Knickerbocker Manufacturing Co., Chicago, Illinois.)

FRENCH NOVELTIES IN RUBBER HEELS AND SOLES.

A French trade journal, "La Chassure Française," illustrates some peculiar half-soles and heels of rubber, quite different from



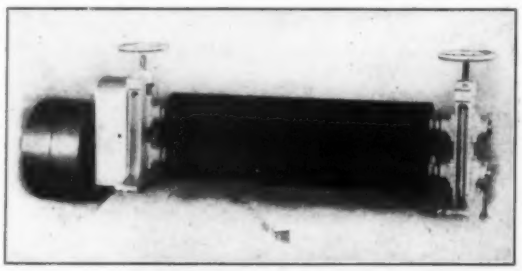
any manufactured in this country. These are intended to be fastened by means of small screws, or clinch nails. The soles are beveled at the edge, and corrugated transversely across the wearing surface. There are many patterns of circular, revolving heels, fastened by a screw in the middle. A peculiar and novel idea is an extensible sole and heel, both having deep slots, which allow considerable adaptation to the width of the shoe or heel to which they are applied, permitting compression to narrow them, or extension for widening. The scheme is ingenious, and enables a repairer to apply such soles and heels to various sizes or shapes of footwear, with a smaller assortment than would be required of non-extensible heels and soles. (Manufacture Française de Caoutchouc, Oullins, France.)

A DRINKING CUP THAT FOLDS FLAT.

A new drinking cup that will fit into even a sailor's breast pocket when folded to its least dimension, is made of aluminum and rubberized fabric. It is three and one-half inches high by two in width, and when folded is only one-eighth of an inch thick. It is called the "Mearkle" sanitary drinking cup. (Duquesne Sales & Manufacturing Co., Binler street and Pennsylvania Railroad, Pittsburgh, Pa.)

TOBACCO WRINGER.

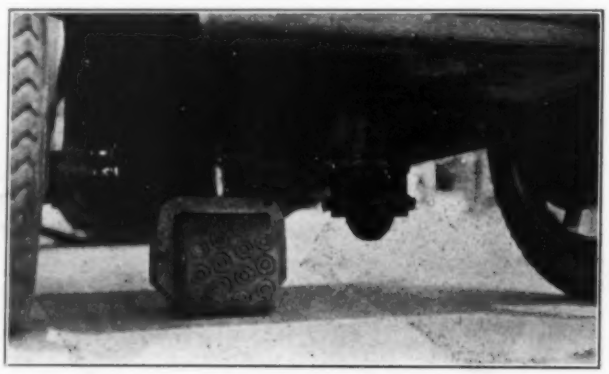
The wringer shown below, while constructed specially for tobacco manufacturers, is also used for any purpose where it is necessary to squeeze liquor out of material, as in bleacheries, dye houses, cloth-shrinking and finishing plants, knitting mills, tanneries and sugar manufactories. It is built to fasten



on the top only of tubs or vats. The rubber-covered rolls may be of any length, in diameters from five to twelve inches. (American Wringer Co., Woonsocket, Rhode Island.)

DEVICE TO PREVENT END-SKIDDING.

A patented device to prevent end-skidding comprises two small wheels, operated by a lever on the steering post or as a foot throttle, and lowered by controllable vacuum power to the ground, thereupon locking automatically. One wheel carries



a vacuum-tread rubber tire and the other is a sharpened disk to cut into mud or ice and may be used as a brake on mountain roads. (C. E. Corkran, Box 7, Station H, Los Angeles, Cal.)

The Editor's Book Table.

COLLECTION TARIFF. THE ANGLO-SOUTH AMERICAN BANK, Limited. London and New York.

THE above-named bank is sending out the well-printed book of about 60 pages, heavy paper covers, giving its terms for collecting in the various South American and European countries where it transacts business. Besides this, there is a large amount of useful information for houses doing an export business.

The methods of paying for goods purchased abroad and the financing of exports are explained in detail, while the stamp duties of the various countries and equivalents of foreign money in United States dollars, the metric system, a list of foreign consulates in the United States, and specimen bill forms are other lines of information given, while there is included a list of the public holidays in the various foreign countries treated.

RUBBER: ITS PRODUCTION, CHEMISTRY AND SYNTHESIS IN the Light of Recent Research. By A. Dubosc and Dr. A. Luttringer. English edition by Edward W. Lewis, A.C.G.I., F.C.S. Charles Griffin & Co., Limited, London. J. B. Lippincott Co., Philadelphia, Pennsylvania. (Cloth, large octavo, 383 pages.)

The authors, in their preface, after noting the great and increasing importance of rubber in the industrial life of the world, touch on the study of planting problems and researches on the synthesis of rubber, and state that they have sought in these pages to refer, as far as possible, to everything relating either to the cultivation or to the modern chemistry of rubber. Needless to say, they have thus produced a very thorough and scientific work which accurately surveys the results of research as applied to rubber, crude, reclaimed and synthentic. The book is in three sections: the first considers natural rubber, its production, present position and cost of production; the second deals with the formation, physical and chemical properties, analysis and constitution of crude rubber; the last section takes up the synthesis of caoutchouc and, after considering the chemical aspects of the problem, discusses the practical solutions under three groups. The statement is made at the close, concerning the problem of the production of synthetic rubber, that "Its solution is at hand, but that it is not yet definitely, and certainly not practically, found."

VAN NOSTRAND'S CHEMICAL ANNUAL, FOURTH ISSUE, 1918. Edited by John C. Olsen, A.M., Ph.D. D. Van Nostrand Co., New York City. (Flexible leather, 778 pages, 5 by 7½ inches. Price, $3 net.)

This well-known hand-book of useful facts for chemists contains in its latest issue over 100 pages of data (48 new tables) more than the third issue. These include tables on the properties of the elements, calibration, the true volume of glass vessels, the use of indicators, the properties of oils, alloys, glass, etc., specific gravity, vapor pressure, units of weights and measures, capacity of tanks, conversion of units of heat, electricity, temperature, freezing-point mixtures, etc. In short, this handbook is indispensable to the chemist in every branch of the science, and tends to become more so with each succeeding issue.

RUTHERFORD'S PLANTERS' NOTEBOOK, SEVENTH EDITION. Times of Ceylon Co., Limited, Colombo, Ceylon, and London, England. (Cloth, octavo, 494 pages. Price, 15 rupees or £1.

This publication, which has proved of steady and constant value on Eastern rubber estates, appears in enlarged form with up-to-date matter so arranged as to be readily available for the planter, the superintendent, the bookkeeper, and the business manager. While much of the matter is of general interest, whatever may be the crop planted, nearly 80 pages are specially devoted to rubber planting in which is given much information as to costs, profits, yield, the cost of a rubber-curing factory and similar matter, with tables and figures. It includes valuable directions regarding tapping, handling the latex, coagulating, sheeting, smoking and packing, and the treatment of diseases.

STANDARDIZATION OF THE SAYBOLT UNIVERSAL VISCOSIMeter. By Winslow H. Herschel. Technologic Paper No. 112. Bureau of Standards, Department of Commerce. Published by the Government Printing Office, Washington, District of Columbia. (Paper covers, 25 pages. Price, 10 cents.)

This paper is a discussion of the dimensions of viscosimeters and the mathematical factors affecting the accuracy of their indications. With the data determined and limit gages proposed the Bureau of Standards is now in a position to certify whether or not a given instrument is of standard dimensions.

PRINCIPLES AND PRACTICE OF COST ACCOUNTING. BY Frederick H. Baugh. F. H. Baugh, Baltimore, Maryland. (Cloth, octavo, 194 pages. Price, $3.)

The question of cost is a vital one in every business. In rubber factories the utmost care and study is given it, and all helps to determine costs more accurately are welcomed. This volume gives exact and definite instruction regarding the details necessary in cost determination, being well supplied with tables and illustrative forms and a very complete index.

NEW TRADE PUBLICATIONS.

L. H. BUTCHER CO., INC., NEW YORK CITY IS AMONG THE many patriotic firms distributing "Flag Etiquette," a pamphlet prepared by the National Committee of Patriotic Societies, Washington, District of Columbia.

* * *

THE SOMERSET RUBBER RECLAIMING WORKS, NEW BRUNSWICK, New Jersey, has issued a celluloid pocket card showing the hat cords and collar and sleeve insignia of the United States land and sea forces so that the rank of men in uniform and the service in which they are engaged may be told at a glance.

* * *

GEORGE W. ENO RUBBER CO., SAN FRANCISCO AND LOS ANGELES, California, has published a neat, convenient, well-arranged catalog of automobile rubber sundries and mechanical rubber goods of its manufacture, and of the large line of automobile sundries, vulcanizing equipment, repair shop machinery and supplies of which it is the Pacific Coast distributer.

* * *

THE WESTINGHOUSE ELECTRIC & MANUFACTURING CO., EAST Pittsburgh, Pennsylvania, has just sent out "Catalog 3-B" of its instruments and relays, a book of over 100 pages, perforated for placing in the covers with which engineers and electrical men have been previously provided. This catalog contains much new matter regarding the company's switch-board, portable and precision instruments, shunts, transformers and temperature relays, each particular type being listed on a single page, where possible, and where more space is needed, the matter is so grouped and arranged as to allow quick reference.

* * *

THE OFFICIAL REPORT OF THE FIFTH NATIONAL FOREIGN Trade Convention that was held in Cincinnati, Ohio, April 18, 19 and 20, has been issued by O. K. Davis, secretary of the National Foreign Trade Council, India House, Hanover Square, New York City. This book of 667 pages includes a stenographic report of the proceedings, the discussions, the speeches at the several sessions, and the addresses at the banquet, together with the papers prepared in advance, a list of the delegates present, the organizations and companies represented, and the organization of the convention.

THE OBITUARY RECORD.

MANY MOURN OFFICE MANAGER.

MISS Anna Mary Germain McGrory, daughter of Mr. and Mrs. Philip J. McGrory, Trenton, New Jersey, passed away at her home on Spring street on Tuesday evening, August 6, at the age of thirty-two. She was well-known in Trenton where she managed the office of her father, who is probably the best-known operator in second-hand rubber machinery in the country, if not in the world.

MISS ANNA MARY GERMAIN MCGRORY.

Miss McGrory was educated at the Cathedral schools, Trenton, and St. Mary's Seminary, at Bordentown (now Plainfield), New Jersey, and later took a course in bookkeeping and stenography at a business college, thus fitting herself for the position as her father's assistant.

The requiem high mass celebrated in St. Mary's Cathedral Friday morning, August 9, was attended by many friends of the young woman, and there were more than fifty floral offerings which included a number of set pieces.

WELL-KNOWN SALES MANAGER.

Dale Owen Pohlman, Chicago district manager for the Thermoid Rubber Co., Trenton, New Jersey, died in the former city recently after a lingering illness. Mr. Pohlman was for several years sales manager for the Thermoid company and stationed at Trenton. He was unmarried. His funeral was held at Greensburg, Indiana, floral tributes being sent there by the employes of the Thermoid company. Mr. Pohlman was a member of the Trenton Lodge of Elks and the Carteret Club, of Trenton.

ARMY AND NAVY AWARDS.

GENERAL ENGINEER DEPOT AWARDS.

THE following awards have been announced at the general engineer depot, United States Army, for furnishing miscellaneous supplies:

CONDUCTOR CABLE.—5,000 feet, $0.09781; type R. R. 2: 1,010 feet, $0.09808, United States Rubber Co., New York City.

GASKETS.—Gage glass: $6.50 per 1,000; gage, red rubber: ¼-inch, $7.50 and $8 per $1,000, The B. F. Goodrich Rubber Co., Akron, Ohio.

HOSE WASHERS.—¼-inch thick, $3.55 and $2.50 per 100; 3/16-inch thick, $1.20, $0.90, and $0.70 per 100; 1/16-inch thick, $3.55 per 1,000, The B. F. Goodrich Rubber Co., Akron, Ohio.

INSULATING TAPE.—Electricians' rubber insulating tape: 2,880 rolls, ¾-inch wide, for export shipment, and 2,880 ditto, for domestic shipment; $0.175, Ohio Rubber Co., Cleveland, Ohio.

PACKING.—Diaphram packing: 2,500 square feet, $0.6294, The B. F. Goodrich Co., Akron, Ohio; square, flax: ¼-inch, ⅜-inch, ½-inch, ⅝-inch, ¾-inch, all at $0.32, Garlock Packing Co., Cleveland, Ohio; asbestos sheet, 1/16-inch thick, $0.398, Dominion Asbestos & Rubber Corp., New York City; vulcanized fiber, sheet: $0.8435 per square foot, American Vulcanized Fiber Co.

INDIAN SUPPLY AWARDS.

The following awards have been made for furnishing supplies during the fiscal year:

HOSE.—Rubber, garden: 965 feet, ¾-inch, $0.11 per foot; cotton, rubber-lined, in lengths of 50 feet—100 feet, one-inch, $0.13 per foot, 1,900 feet, two-inch, $0.305 per foot; double jacket—1,600 feet, 2½-inch, $0.65 per foot, Empire Rubber & Tire Co., Trenton, New Jersey.

PACKING.—Asbestos sheet: 372 pounds, in rolls, $0.45; 33 pounds, in squares, $0.45, The B. F. Goodrich Rubber Co., Akron, Ohio; square, spiral, steam piston: 17 pounds, ¼-inch; 17 pounds, 5/16-inch; 40 pounds, ⅜-inch; 13 pounds, 7/16-inch; 30 pounds, ½-inch; 4 pounds, 9/16-inch; 11 pounds, ⅝-inch; 5 pounds, ¾-inch, all at 33.6 cents, Goodyear Tire & Rubber Co., Akron, Ohio; round, spiral, steam piston: 12 pounds, ¼-inch; 8 pounds, 5/16-inch; 26 pounds, ⅜-inch (sample); 6 pounds, 7/16-inch; 20 pounds, ½-inch; 1 pound 5/16-inch; 26 pounds ⅝-inch, all at $0.60, Goodyear Tire & Rubber Co., Akron, Ohio: sheet, gasket, rubber: 35 pounds, 1/32-inch; 342 pounds, 1/16-inch (sample); 482 pounds, ⅛-inch; 25 pounds, ¼-inch, all at $0.42, Garlock Packing Co., St. Louis, Missouri; cloth inserted rubber, sheet, for gaskets: 66 pounds, 1/16-inch (sample); 147 pounds, ⅛-inch; 80 pounds, ¼-inch, all at $0.35, Garlock Packing Co.

RUBBER BELTING.—55 feet, three-ply, three-inch, $0.135; 275 feet, four-inch, $0.18; 520 feet, six-inch, $0.27; 257 feet, four-ply, eight-inch, $0.432; 25 feet ten-inch, $0.54; Manhattan Rubber Manufacturing Co., St. Louis, Missouri.

MEDICAL SUPPLIES, INDIAN SERVICE.

The following awards have been made for furnishing medical supplies for the Indian service during the fiscal year 1918:

HAND ATOMIZERS.—460, $0.365, Goodyear Rubber Co., St Louis, Missouri.

HARD RUBBER SYRINGES.—90, two-ounce, $0.57, Goodyear Rubber Co., St. Louis, Missouri.

NAVY EMERGENCY PURCHASES.

The following awards have been made by the bureau of supplies and accounts, Navy Department, for Navy emergency purchases:

BALLOONS.—Red rubber: 10,000, $1,100; gas: 20,000, $540, Faultless Rubber Co., Ashland, Ohio.

TRACK EQUIPMENT.—Rubber, for naval air stations: $1,400, Cleveland Tractor Co., Cleveland, Ohio.

PANAMA CANAL AWARDS.

The following awards have been made for furnishing supplies for the Panama Canal:

GASKETS.—Asbestos: 260, Belmont Packing & Rubber Co., Philadelphia, Pennsylvania.

HOSE.—1,000 pieces, $1,210, United States Rubber Co., New York City.

PACKING.—Asbestos: 200 pounds, $120, H. W. Johns-Manville Co., New York City; flax: 350 pounds, $280, Belmont Packing & Rubber Co., Philadelphia, Pennsylvania.

RUBBERIZED DRILL.—25 yards, $17, Empire Rubber & Tire Co., Trenton, New Jersey.

VALVES.—Rubber; 140, $38.15, Empire Rubber & Tire Co., Trenton, New Jersey.

VULCANIZING MATERIAL.—$347.23, Goodyear Tire & Rubber Co., Akron, Ohio.

JUDICIAL DECISIONS.

PLYMOUTH RUBBER CO. *v.* GOLDSTEIN.—Court of Appeals of New York, February 12, 1918.

This was an action against a guarantor for goods sold to Satz and Berman to the extent of $4,000. The guaranty was admitted, but the delivery denied. A judgment was granted and affirmed by the Court of Appeals. A motion for reargument was denied. (Northeastern Reporter, Volume 119, page 1072.)

REPUBLIC RUBBER CO. *v.* CONSOLIDATED RUBBER CO. and THE B. F. GOODRICH CO. *v.* CONSOLIDATED RUBBER TIRE CO.—United States Supreme Court, June 10, 1918.

Writ of *certiorari* denied in both of the above cases. (Supreme Court Reporter, Volume 38, page 582.)

DOUBLE FABRIC TIRE CO. *v.* THE GENERAL TIRE & RUBBER CO., United States District Court, Northern District of Ohio, E. D., August 12, 1918.

It was claimed that The General Tire & Rubber Co. infringed on patent No. 964,446, covering a blowout patch.

The General Tire people claimed the patent invalid because of lack of invention and prior use. Both of these claims were upheld by the court and the complaint was dismissed at the cost of the complainant.

ALLEGED VIOLATION OF ANTI-TRUST LAW.

The Federal Trade Commission has complained of the alleged violation of the Anti-Trust Law by The Goodyear Tire & Rubber Co., charging it with having used unfair methods of competition in interstate commerce.

It is claimed that the system of "service stations" instituted throughout the country was used as a means of fixing the resale price of the goods by dealers; that the company has refused to sell its products to dealers who would undersell it, or who would sell to other dealers with whom the manufacturer would not deal directly; that it has induced its employes and other dealers to spy out those who did undersell its products; that in order to prevent the sale of goods at prices lower than those set, the manufacturer would buy back its own products; and that it also refused to sell to dealers doing a mail order business and used this fact as an argument to increase sales to local dealers.

It is claimed that the service rendered by the "Goodyear Service Stations" is entirely in the hands of the individual dealers and is no other than that which they would give if dealing in any other brand of goods; that the Goodyear company has insisted that dealers keep on hand a stock larger than they desired, and also insisted that adjustments under its guarantee be made directly with the manufacturer, thus preventing the dealers from sharing in the replacement sales or substituting a brand more suitable to the consumers' needs; that there is also a clause in the service station agreement whereby dealers in automobiles and the like had to specify the Goodyear products in their orders, substitution of other makes of tires, should they be temporarily out of the required size, not being permitted.

In connection with the pressed-on truck tire, it is asserted that the company sold, through a conditional sale contract, a machine for pressing these on. Through this, the dealers were controlled, as the machine could be used only for attaching Goodyear tires.

It is claimed that the company made a practice of selling its tires to individual companies, other than dealers, who operated more than a given number of cars, selling them at the dealer's price, although sometimes the sales were in retail quantities. The Federal Trade Commission claims that the company was discriminating in price between different purchasers of its products, contrary to the Clayton Act, and has set September 3, 1918, as the date for a hearing, to be held at the office of the Federal Trade Commission, Washington, District of Columbia. (Federal Trade Commission, Docket 117.)

CUSTOMS APPRAISER'S DECISIONS.

CHICLE—TUNO.—The appeal of G. W. Rueff to have chicle entered as a non-enumerated unmanufactured article under paragraph 385, tariff act of 1913, instead of under paragraph 36, as chicle, crude, at 15 cents per pound, was overruled. (Treasury Decisions, Volume 135, No. 4, July 28, 1918.)

INDIA GUM RESIN.—Under a new ruling by the Customs Division of the Treasury Department, india gum resin is to be assessed at the rate of 15 per cent ad valorem under paragraph 385, tariff act of 1913, as a manufactured article wholly or in part not provided for, instead of at 10 per cent under the provision of the same paragraph as a non-enumerated unmanufactured article.

ELASTIC CORDS AND WEBBINGS.—Elastic braids, cords, webbings and beltings, classified under paragraphs 349, 401, and 402, tariff act of 1909, were claimed by Dieckerhoff, Raffloer & Co. to be dutiable under paragraph 463 at 35 per cent as articles in chief value of rubber. Their protests were overruled on all materials except webbings found to be composed of artificial silk, cotton, and india rubber, india rubber chief value. They were held dutiable under paragraph 463. (Treasury Decisions, Volume 35, No. 7, August 15, 1918.)

RUBBER TRADE INQUIRIES.

THE inquiries that follow have already been answered; nevertheless they are of interest not only in showing the needs of the trade, but because of the possibility that additional information may be furnished by those who read them. The editor is therefore glad to have those interested communicate with him.

(649.) An inquiry has been received for the addresses of manufacturers of gages suitable for testing the density or hardness of rubber.

(650.) A correspondent asks for the address of a manufacturer of machinery for making rubber rings for Mason fruit jars.

(651.) A reader asks for the address of a manufacturer of Hollands, such as used for calendered goods.

(652.) An inquirer wishes to obtain a machine for shredding cotton and woolen rags, waste, etc.

(653.) A subscriber requests the addresses of concerns specializing in supplying laboratory outfits for vulcanizing rubber.

(654.) Request is made for information as to where a fabric-pulling machine may be obtained.

(655.) A reader desires to purchase a machine to cut the beads off old auto tires.

(656.) A subscriber requests the address of the manufacturer of the "Fitall" bath spray connection.

(657.) A subscriber inquires as to where he can obtain glue which will adhere firmly to vulcanite and be insoluble in water.

TRADE OPPORTUNITIES FROM CONSULAR REPORTS.

Addresses may be obtained from the Bureau of Foreign and Domestic Commerce or its district or co-operative offices. Request for each should be on a separate sheet and state number.

(27,215.) A man in Switzerland wishes to secure an agency for the sale of pneumatic tires for automobiles; also solid bands, motorcycle and bicycle tires, and other rubber goods connected with the automobile and bicycle trade.

(27,269.) An agency in Switzerland desires to represent American manufacturers and exporters of rubber goods.

(27,276.) A company of general commission merchants in Spain desires to secure agencies for the sale of rubber in sheets for manufacturing tubing and other rubber articles.

(27,292.) A man of British nationality who is at present connected with an import and export house in British Malaya and who has spent about 20 years in the Far East in connection with foreign trade, desires to be placed in communication with American manufacturers, exporters, and importers, with a view of establishing in the Far East, but with headquarters in the United States, an agency representing non-competitive manufacturers, exporters, and importers of American goods exclusively, stock of certain lines to be carried, doing an indent or order-taking business in others, and exporting tin, rubber, tapioca, and other local products to and for his principals.

(27,316.) A man in Switzerland wishes to buy rubber nipples and rubber balls.

(27,333.) An agency is desired in South Africa for the sale of rubber tires.

(27,358.) A man in Switzerland desires to buy automobile tires.

(27,359.) A man in France wishes to represent American manufacturers of ebonite handles. Sample may be examined at the bureau or its district offices.

A Liberty Bond in the hand is worth two in the booth.

National Association of Waste Material Dealers, Classification for Scrap Rubber.

CIRCULAR D.

THIS standard of packing was adopted by the Scrap Rubber Division and approved by the executive committee of the association on June 18, 1918, to be effective from July 1, 1918, to July 1, 1919, at which date a new circular will be issued.

All goods bought or sold under the following specifications are understood to consist only of domestic or Canadian manufacture, unless otherwise stipulated. All grades of scrap rubber shall be bought and paid for net weight, mill weights to govern, and no allowance for bagging or covering of any kind shall be made, nor shall the same be returned to the seller.

DELIVERY.

A.—All shipments of scrap rubber must be contained in bags, bales, bundles or other suitable containers, and if shipped loose a charge of ¼ cent per pound shall be made for extra handling, except automobile tires and railroad hose which may be shipped loose.

B.—1. A carload unless otherwise specified shall consist of fifteen tons. 2. A ton when applied to domestic stock shall mean 2,000 pounds. A ton when applied to foreign stock shall mean 2,240 pounds.

C.—Shipments direct to a mill shall consist of not less than 2,000 pounds. Otherwise a charge of ¼ cent per pound shall be made.

D.—All scrap rubber of foreign manufacture shall be bought C.I.F. port of entry as per weight determined by sworn weigher's certificate, seller to bear expense of weighing, and shall be subject to same conditions as govern purchases of domestic manufacture.

REJECTIONS.

E.—Upon his request all rejections shall be returnable to the seller within thirty days from the time notice of rejection is received by him and upon payment by him of ½ cent per pound to cover cost of sorting and rebaling. If shipping instructions are not furnished within the above mentioned 30 days the purchaser shall be at liberty to make such disposition of the material as he may see fit. The above does not apply if rejected material is purchased by the buyer.

F.—When shipments are made direct to a mill each grade of scrap rubber must be packed separately, and if not so packed a handling charge of ½ cent per pound will be made.

G.—All scrap rubber must be dry and free from dirt. All scrap received wet may be dried by the buyer, such shipments to be paid for on the dry weight as ascertained.

H.—A purchase contract shall not be considered filled until the full quantity within 2½ per cent more or less net weight shall have been received any rejections to be replaced within thirty days of the date of notice of rejection to the shipper.

EMBARGO.

I.—If through embargo a delivery cannot be made at the time specified the contract shall remain valid and shall be completed immediately on the lifting of the embargo, and terms of said contract shall not be changed. Notice of embargo must be served by seller.

Code words appear in italics.

1.—RUBBER BOOTS AND SHOES (*Acre*). The deliveries of rubber boots and shoes must consist of rubber boots and shoes of domestic or Canadian manufacture. Red, white, tan, and fancy colored shoes are not a good delivery. They must be dry and free from dirt. All cloth top shoes, trimmed or untrimmed, and soles or heels of rubber boots and shoes from which the uppers have been removed shall not be accepted as a good delivery.

2.—TRIMMED ARCTICS (*Band*). Must be closely trimmed and free of leather.

2.—(a)—UNTRIMMED ARCTICS. Must be free from leather.

3.—TRIMMED TENNIS SHOES (*Clam*). Must be black; closely trimmed; free from molded soles and leather.

3.—(a)—UNTRIMMED TENNIS SHOES. Must be free from leather and molded soles.

4.—STANDARD MIXED GRAY AUTO TIRES (*Dirk*). Must be free from the following: All jet black tires, unguaranteed tires, heavy beaded tires, non-pneumatic or filled tires. Must not contain any hard, oxidized, burnt, single tube, motorcycle stripped or badly worn tires, nor tires containing leather or metal.

4.—(a)—JET BLACK AUTO TIRES. Must be free from all gray tires, unguaranteed tires, heavy beaded tires, non-pneumatic or filled tires. Must not contain any hard, oxidized, burnt, single tube, motorcycle, stripped or badly worn tires, nor tires containing leather or metal.

5.—UNGUARANTEED TIRES (*Earl*). Must be free from heavy beaded tires, hard or oxidized, stripped, badly worn, and tires with leather and metal.

6. HEAVY BEADED TIRES (*Farm*). Must be free from hard or oxidized tires, stripped, badly worn and tires with leather and metal.

7.—BADLY WORN TIRES (*Game*). Must be free from hard or oxidized tires, heavy beaded and tires with leather and iron. A reasonable proportion of the tread must be on the tires.

7.—(a)—STRIPPED TIRES. Must be free from hard or oxidized tires, heavy beaded and tires with leather and iron.

8.—NO. 1 GRAY AUTO TIRE PEELINGS (*Hawk*). Must be free from cloth, metal, leather and jet black peelings.

8.—(a)—NO. 1 JET BLACK PEELINGS. Must be free from gray peelings, cloth, metal and leather.

9.—NO. 2 GRAY AUTO TIRE PEELINGS (*Iced*). Must consist of peelings from auto tire treads only and must be free from leather, metal, stripped auto tire fabric and jet black peelings.

9.—(a)—NO. 2 JET BLACK PEELINGS. Must consist of peelings from auto tire treads only and be free from leather, metal, stripped auto tire fabric and gray peelings.

10.—BICYCLE TIRES (*Jade*). Must be free from hard or oxidized tires, wire and beaded tires.

11.—SOLID WAGON AND CAB TIRES (*Kite*). Must be free from metal and baby carriage tires.

12.—SOLID MOTOR TRUCK TIRES (*Lamp*). Tires must be 2½ inches or over in diameter. Must be free from metal and tires with hard bases and fibre bases.

13.—AIRBRAKE HOSE (*Mask*). Must be free from metal, hard or oxidized hose and steam hose.

14.—GARDEN HOSE (*Nail*). Must be ½ inch or over in diameter and free from metal, rags, rope and cotton covered hose.

15.—LARGE HOSE (*Oven*). Large hose must be one inch or over in diameter. Must be free from metal, rags, rope, hard or oxidized hose and all cotton covered hose.

16.—COTTON COVERED FIRE HOSE (*Park*). Must be rubber lined, and free from hard or oxidized hose, double jacketed and extra heavy single jacketed hose, and metal.

17.—NO. 1 AUTO INNER TUBES (*Quiz*). Must be strictly elastic floating tubes, free from crusty tubes, cloth, metal, patches and valve seats.

18.—NO. 2 AUTO INNER TUBES (*Race*). (Known as Compounded Tubes.) Must be standard tubes, free from crusty tubes, cloth and metal.

19.—NO. 1 BICYCLE INNER TUBES (*Salt*). Must be strictly elastic floating tubes, free from rusty tubes, cloth, metal, and valve seats.

20. NO. 2 BICYCLE INNER TUBES (*Train*). (Known as Compounded Inner Tubes.) Must be standard tubes, free from crusty tubes, cloth and metal.

21.—RED AUTO INNER TUBES (*Utes*). Must be standard tubes, free from punchings, crusty tubes, cloth, metal and black patches.

22.—WHITE AUTO INNER TUBES. Must be standard tubes, free from crusty tubes, cloth, hard metal, and patches other than white.

23.—WHITE BICYCLE INNER TUBES. Must be standard tubes, free from crusty tubes, cloth, hard metal, and patches other than white.

24.—NO. 1 WHITE RUBBER (*Vase*). Must consist of strictly clean white soft druggists' sundries and must be free from cloth and metal.

25. NO. 2 WHITE RUBBER (*Ward*). Must consist of white horse shoe pads, white toys, white mechanical goods and to be free from cloth, metal, crusty, hard or oxidized material.

26.—NO. 3 WHITE RUBBER (*Ware*). Must consist of painted white rubber balls or toys from which the paint has been removed, and to be free from cloth, painted wainscoting, metal and hard or oxidized rubber.

NO. 4 WHITE RUBBER. Must consist of white jar rings and be free from cloth, metal and hard or oxidized rubber.

27.—WHITE WRINGER RUBBER (*Wren*). Must be strictly white soft rubber, free from yellow wringer rubber, hard or oxidized wringer rubber, cloth or metal.

28.—YELLOW WRINGER RUBBER (*Xray*). Must be free from cloth, metal and hard rubber.

29.—MIXED BLACK RUBBER (*Yoke*). Must be free from cloth, metal, crusty, hard or oxidized material, packing, stripped matting, tiling, baby carriage tires and molded soles.

30.—MATTING AND PACKING. (*Zero*). Must be free from Garlock, Crandall and piston packing, belting and similar material, metal and hard or oxidized stock.

31.—NO. 1 RED RUBBER (*Yeast*). Must consist of soft red druggists' sundries, free from maroon, chocolate, and other dark shades, also free from cloth and metal.

32.—NO. 2 RED RUBBER (*Yawl*). Must consist of material such as red toys, balls, mechanical red. Must be free from jar rings, soles, packing, hard or oxidized rubber, cloth and metal.

33.—RED PACKING (*Yarn*). Must be free from hard or oxidized rubber, cloth and metal and discolored rubber.

MOTOR TRUCK OWNERS' CONVENTION.

The opening convention of the Truck Owners' Conference, Inc., to be held in Detroit, Michigan, September 19 and 20, marks the initiation of a concerted national movement to bring about wider adoption of motor truck freight transportation as a patriotic war measure and to secure greater efficiency in truck operation. The program will consist of addresses by well-known truck experts and experienced operators, each an authority in his particular field, who will tell their methods and results. Special films of a few of the more efficiently operated truck fleets in Detroit and Chicago will be shown. The convention is open without fee to all interested truck users, and among the rubber tire concerns cooperating may be mentioned the Firestone, Diamond and Goodyear companies.

Similar conventions will be held during 1918 and 1919 in Boston, New York, Philadelphia, Washington, Pittsburgh, Buffalo, Cleveland, Detroit, Chicago, Minneapolis, Omaha, Kansas City, Tulsa, Dallas, Los Angeles, San Francisco, Salt Lake City and Atlanta, each of which is a logical transportation center. Further information may be obtained by addressing the Truck Owners' Conference, Inc., 327 South La Salle street, Chicago, Illinois.

News of the American Rubber Industry.

THE NEW HOME OF THE RUBBER ASSOCIATION OF AMERICA, INC.

THE removal of the offices of The Rubber Association of America, Inc., from 17 Battery Place, lower Broadway, New York City, to the uptown district, was consummated last month, and affords a more convenient location for the greater number of the members. The new quarters are large and commodious, being located on the ninth floor of the Vanderbilt Concourse Offices, 52 Vanderbilt avenue, a modern twenty-story office building, situated at the corner of Vanderbilt avenue and East 45th street.

VANDERBILT CONCOURSE OFFICES.

This location is convenient to the 42d street district, the principal hotels, and the Grand Central and Pennsylvania stations. A convenient subway makes easy access from the Grand Central station to the offices of the association, while the Third avenue elevated station and several surface car lines are nearby.

MASON TIRE SALES CO. IN WEST VIRGINIA.

The Mason Tire Sales Co., 19-21 West 10th street, Wheeling, West Virginia, has recently opened a store for the sale of tires and tubes manufactured by The Mason Tire & Rubber Co., Kent, Ohio. The store is in charge of William F. Bruhn, a well-known Wheeling man.

A unique feature of the policy of the new store is the elimination of traveling salesmen and solicitors and the placing of its business on a strict cash basis, no charge accounts being carried. It claims that in this way it can sell a better grade of goods at lower prices. It also maintains a mail-order department, through which it fills orders the day received, sending goods by parcel post or express, and allowing the customer credit for any with which he is not pleased if he returns them within three days. A service station provides free air and water for all patrons.

FIBREX 600 AND 700.

The Electric Rubber Reclaiming Company of Barberton, Ohio, has recently been allowed patents on a new product which is made from rubber waste containing a large percentage of cotton fiber. This product is made in two grades, and will be known at Fibrex 600 and Fibrex 700. The Fibrex 600 has a specific gravity of about 1.25 and can be used to advantage in mats, packing, floor covering and such articles as now require cotton backing or insertion. The 700 has a specific gravity of about 1.10 and may be used to advantage where it is necessary to have higher quality. With Fibrex 600 and 700 it is possible to get as high as 40 to 50 per cent cotton fiber mixed into compounds without the extra milling effort necessary to mix this amount of ground rags or other fibrous materials into compound. Under the present war conditions these stocks can be used to great advantage by eliminating the use of woven fabrics.

DIVIDENDS.

The Ajax Rubber Co., Inc., New York City, has declared its quarterly dividend of $1.50 per share, payable September 14 to stock of record August 30, 1918.

The Amazon Rubber Co., Akron, Ohio, has declared its quarterly dividend of one and one-half per cent on its common stock.

The Beacon Falls Rubber Shoe Co., Beacon Falls, Connecticut, has declared a dividend of $1.75 per share on its preferred stock, payable September 3 to stock of record August 26, 1918.

The Firestone Tire & Rubber Co., Akron, Ohio, has declared its regular quarterly dividend of $1.25 per share and a special dividend of $1 per share on its common stock, payable September 20 to stock of record September 10, 1918.

The General Electric Co., Schenectady, New York, has declared its quarterly cash dividend of two per cent, payable October 15 to stock of record September 14, 1918.

The Goodyear Tire & Rubber Co., Akron, Ohio, has declared its quarterly dividend of three per cent, payable September 1 to stock of record August 20, 1918.

The Hawkeye Tire & Rubber Co., Des Moines, Iowa, has declared its semi-annual dividend on preferred stock.

The Pennsylvania Rubber Co., Jeannette, Pennsylvania, has declared its regular quarterly dividends of one and three-quarters per cent on preferred stock and one and one-half per cent on common stock, payable September 30 to stock of record September 15, 1918.

The Plymouth Rubber Co., Canton, Massachusetts, has declared its regular quarterly dividend of $1.75 on its preferred stock, payable September 2 to stock of record August 26, 1918.

The Republic Rubber Corp., Youngstown, Ohio, has declared its quarterly dividend of one and three-quarters per cent on its preferred stock, payable September 1 to stock of record August 20, 1918.

CROWN TIRE AND RUBBER CO. BEGINS OPERATION.

The Crown Tire & Rubber Co., Ralston, Nebraska, has the honor of being the first concern to commence the manufacture of cord casings and inner tubes in Nebraska. Its new factory, which was completed last October, was opened August 7, the delay being due to difficulty in getting machinery earlier.

The company's factory site covers five acres and the floor space of the factory itself is 35,000 square feet. The equipment is of the modern type and includes a rubber mill, dry kiln, hydraulic presses, liquid cement mixer, tire machinery, etc.

The company is capitalized at $350,0000 and the officers are: Dr. Henry A. Reichenbach, Omaha, president; George J. Adams, Lincoln, vice-president; James B. McDonald, North Platte, secretary-treasurer; and A. P. Johnson, Omaha, general manager.

JERSEY CITY INDUSTRIAL REGIONAL COMMISSION.

Herman Seydel, the Jersey City member of the Regional Industrial Committee, recently designated John J. Voorhees, Jr., Voorhees Rubber Manufacturing Co., and B. L. Stowe, Eureka Fire Hose Manufacturing Co., as representatives of the rubber industry in Jersey City, New Jersey. These designates met in conference, at which the New Jersey Car Spring & Rubber Manufacturing Co., Inc., was also represented, when the objects of the Industrial Commission were explained by Mr. Seydel, and the manufacturers' support was pledged.

TRADE NOTES.

The Kelly-Springfield Tire Co., New York City, through its branch at Atlanta, Georgia, has opened a distributing depot at Jacksonville, Florida, due to the increased sales of automobiles in the latter state during 1917. The new depot is in charge of J. T. Knight, formerly of the Atlanta office.

The Archer Cord Tire & Rubber Co., Inc., 711 15th avenue, N. E., Minneapolis, Minnesota, has opened a branch office at 1013 Starks building, Louisville, Kentucky, in charge of E. E. Howard. Business in southern Indiana as well as in Kentucky will be handled from this office. This concern follows the plan of securing a dealer in each town and admitting that dealer to partnership by selling him shares of common stock.

The Boone Tire & Rubber Co., Chippewa Falls, Wisconsin, has purchased a site of 24.81 acres on West Franklin street, Waco, Texas, at a cost of $12,405, for a factory site. An L-shaped building, approximately 64 feet wide, will be built, the main building 320 feet long and the L 160 feet. In addition to tire casings and tubes, the company will manufacture solid tires. The company's plant at Sycamore, Illinois, is now working on a ten-hour basis and anticipates the need for a double shift of workers at an early date. The plant at Chippewa Falls, Wisconsin, will be operated early in September and will also manufacture solid tires in addition to pneumatic casings, tubes, and shoe soles.

The J. & D. Tire Co., Charlotte, North Carolina, has elected the following officers: William F. Smith, president; E. N. Downes, vice-president and factory manager; E. O. Machlin, treasurer, and R. L. De Lisser, secretary. Harold O. Smith, the former president, has sold his interest to the company and is no longer connected with it.

The Camel Tire Co., 712 Madison avenue, Toledo, Ohio, distributer of standard brands of automobile tires, has branches at the following places in Ohio: Sandusky, in charge of George E. Harter; Chillicothe, in charge of H. H. Pierce, and Lima, in charge of E. H. Madison.

The Universal Tire & Rubber Association, which has its executive offices on the eleventh floor of the Union National Bank building, Houston, Texas, is building the first unit of its factory, 78 by 360 feet in length, of steel, concrete and glass construction. The contract calls for completion of the factory November 20, 1918. The concern will manufacture Banner Cord and Tex tires and tubes. O. A. Ryfle is general sales director.

The Hawkeye Tire & Rubber Co., Des Moines, Iowa, did a business amounting to practically $650,000 during the first six months of 1918.

The Great Lakes Tire Service, Inc., 2329 Michigan avenue, Chicago, has branches now at 857 Sheridan Road and 367 Garfield Boulevard. Luther W. McCord is president of the company and Walter C. Bannister, general manager.

The Houston Pneumatic Puncture Proof Wheel Co., Houston, Texas, has increased its capital from $25,000 to $250,000, for the purpose of manufacturing and selling wheels for automobiles, trucks and other vehicles. The company was chartered in Texas on February 6, 1914. M. E. Andrews, Houston, Texas, is president and manager of the company, and H. S. Autrey, Cleveland, Ohio, is secretary and manager.

The Hardman Tire & Rubber Corp., Belleville, New Jersey, has reorganized under the name, Hardman Rubber Corp., and will shortly build a new plant, the location of which is only tentatively decided on at this date. In addition to its present type, it will manufacture cushion tires. The new officers are: Lorne A. Scott, president; Albert A. Pashek, vice-president and manager of production; Walter Haefeli, treasurer; Arthur C. Bang, secretary; Clayton C. Dobbs, sales manager; and John D. Reynolds, manager of sales in southern territory, with headquarters at Baltimore.

The Thermoid Rubber Co., Trenton, New Jersey, has consolidated its branch at Indianapolis, Indiana, with the Chicago branch at 2009 South Michigan avenue, Chicago, Illinois.

The Power Rubber Co., San Francisco, California, has secured the agency for Kelly-Springfield tires. It maintains branches in Oakland and Fresno, California. Col. James E. Power is president and Thomas J. Turner, vice-president.

The Cleveland Raincoat Co., 608 St. Clair avenue, N. W., Cleveland, Ohio, has increased its capital stock from $30,000 to $55,000.

Leo Hofmeister Co., Milwaukee, Wisconsin, has purchased the business of the International Rubber Co.

The Chippewa Rubber Co., Eau Claire, Wisconsin, has elected the following officers: Edward Hutchens, president; E. C. Gavin, vice-president and manager; R. B. Gillette, secretary, and S. P. Woodard, treasurer. It is expected that machinery, which is now being installed, will be in operation by the middle of September, producing waterproofed cloths, hospital sheeting, rubberized fabrics, and waterproofed shoe duck.

The Cleveland Osborn Engineering Co., Cleveland, Ohio, has secured a contract to build a new automobile tire plant for The Brunswick-Balke-Collender Co., Chicago, Illinois.

The General Valve Co., 47-53 Dinsmore place, East New York Brooklyn, New York, has increased its capital from $10,000 to $25,000.

The Roessler & Hasslacher Chemical Co., 100 William street, New York City, requests that all mail in future be directed to Post Office Box No. 899, City Hall Station, New York, New York.

At a recent meeting of the Bull's Eye Rubber Co., Inc., 131 Harris avenue, Long Island City, the following officers were elected: C. Henry Squires, president; Arthur C. Squires, secretary and treasurer. Walter Moore was elected a director.

The Cameron Machine Co., 57 Poplar street, Brooklyn, New York, has acquired property at 13 Hicks street, Brooklyn, where it intends to build a three-story addition to its factory to relieve the demands made on its present facilities, due to the extensive use of its machines in the direct and indirect execution of government orders.

The J. C. Finck Mineral Milling Co., dealer in crude and refined barytes, northwest corner of Barton and Kosciusko streets, St. Louis, Missouri, has acquired 12,000 square feet of ground.

The Rare Metal Products Co., formerly of Glenridge, New Jersey, has removed to Belleville, where it recently bought the factory of the Seaton Chemical Co., as noted in our issue of August 1, 1918. The company now has one of the largest and best equipped antimony plants in America, and will be able to double its output.

PLANS TO ERECT SULPHUR AND SULPHURIC ACID PLANTS.

The Texas Sulphur Co., Inc., Orange, Texas, is a $500,000 corporation owning sulphur-bearing lands in Culberson county, Texas, which plans to erect sulphur and sulphuric acid plants. The officers are: A. C. Fleig, president; A. C. McFarlane, vice-president; T. M. Dodd, treasurer, and H. M. Tippett, secretary.

GOODRICH EARNINGS.

Announcement has been made by the B. F. Goodrich Rubber Co., Akron, Ohio, that its net profits for the first six months of 1918 were $7,150,000, after deducting maintenance charges, depreciation and doubtful accounts and providing for all excess profit and income taxes. This total almost equalled the profits of the whole of last year, which amounted to $10,544,677.

The increase of profit, it was said, was due not entirely to the increase of war business done by the company, but rather to the great increase in the whole volume of business.

FISK RUBBER CO.'S EXPORT MANAGER.

The Fisk Rubber Co., Chicopee Falls, Massachusetts, reports rapid growth of its business in Central and South American countries in the last few months and this has reached such proportions that it seemed wise to send a representative to make a personal visit to those countries to study conditions with a view to advancing further the sale of Fisk tires south of the equator.

JOHN B. MAUS.

John B. Maus, export manager of the company, accordingly left during July for a trip which will probably cover four months' time. He went to Key West from New York City and from there expected to go through the Panama Canal, down the Pacific Coast, crossing into Argentina by mule-back over the Andes, and returning north inland.

Mr. Maus has been export manager of the Fisk company since the spring of 1916 and during the succeeding winter made a trip to Porto Rico to investigate conditions there, as noted in our issue of February 1, 1917.

FOUNDED SIXTY YEARS AGO.

The sixty-first year of the commercial existence of Hagemeyer & Brunn, 82 Beaver street, New York City, one of the oldest import and export houses in the country, was completed last month. The business was founded on August 3, 1858, by J. W. Brunn, the grandfather of Ewart M. Brunn, who is the present owner of the business. In 1859 F. E. Hagemeyer entered the firm. For many years the house acted as shipping agents for a steamship line operating between this city and Portuguese ports, but during the last twenty years a general export and import business has been carried on. The latter consists mainly of crude rubber, cocoa, hides, nuts and oils. The principal export business of the house is done with South America and Portugal.

THE FEDERAL RUBBER CO.'S PICNIC.

The annual picnic of The Federal Rubber Co., Cudahy, Wisconsin, was held at Waukesha beach on Saturday, August 17, with more than 5,000 employes, their families, and friends participating. Transportation was effected by interurban cars and the company furnished employes with excursion tickets covering fare,

FEDERAL EMPLOYES AT WAUKESHA BEACH.

a box of Cracker Jack, and an ice-cream cone, at ten cents each, although the round-trip fare is regularly more than a dollar. In addition, picnic badges and favors were distributed en route at the company's expense.

The patriotic features of the day included the raising of the Stars and Stripes and a salute, a parade and suitable addresses. Moving pictures were taken as the program proceeded. Later, athletic events took place, arranged by the sports committee, and included races, swimming contests, baseball games, tug of war, etc. The success of the outing was largely due to the activities of B. H. Pratt, manager, and A. A. Frank, superintendent.

CANADIAN NOTES.

SEVENTY-ONE employes and pensioners of the Dominion Rubber System, including ten women, were given a reception and dinner in the lunch room of the Canadian Rubber Factory, Montreal, on June 1, 1918, the occasion being in celebration of the presentation of the twenty-five year Long Service Gold Badge of the System. A. D. Thornton, chairman of the committee in charge, and himself an employe of twenty-seven years' standing, presented each of the employes to be honored to President Talmon Henry Rieder, who bestowed the badges. Addresses emphasizing the cooperation between employer and employe followed, one of which was delivered in French. Thereafter, J. E. Plamondon, on behalf of the recipients of the badges, presented Talmon H. Rieder, president of the Canadian Consolidated Rubber Co., Limited, with an illuminated address in appreciation of his efforts for the welfare of employes and his loyalty to the company during the ten years he has served it.

TALMON HENRY RIEDER.

The Maple Leaf Rubber Factory of the Dominion Rubber System reports two more enlistments: H. G., 71st Battalion, C. F. A., and H. Baumann, R. F. A.

George F. Ingraham of the Dominion Rubber System's branch at Regina, Saskatchewan, has enlisted in the Royal Air Force.

John Shapter succeeds J. Richardson as accountant for the Dunlop Tire & Rubber Goods Co., Limited, at Calgary, Alberta, Mr. Richardson having removed to Vancouver, British Columbia, where he will go on the road for the same company.

J. M. Cane is in charge of the Canadian advertising of the Arlington Co., Limited, and the Du Pont Fabrikoid Co., Limited, subsidiaries of E. I. du Pont de Nemours & Co., Wilmington, Delaware, U. S. A.

Troops training in Canada have been regularly supplied with heavy tan rubbers and two-buckle cashmerette excluders for extra protection in winter. Owing to the scarcity of cashmerette, two-buckle excluders are now supplied with tan duck tops (eleven-ounce boot duck), lined with natural wool fleece. Canadian rubber shoe factories are now working on large orders for both excluders and tan rubbers.

The Canadian Consolidated Rubber Co., Limited, has secured a building adjoining its Toronto warehouse at the corner of Front and Yonge streets and is laying out the ground floor as offices and sample rooms.

A. B. JONES.

A. B. JONES, one of the second vice-presidents of The B. F. Goodrich Co., has been appointed by the American Red Cross to the position of director of transportation and distribution of Red Cross supplies in France. The selection was made after consideration of a number of other Americans identified with big business. H. P. Davison, head of the American Red Cross, and Major Atterbury, in charge of all American Army transportation in France, are responsible for the appointment, Mr. Jones having been formerly associated in business with Major Atterbury when the latter was head of the Pennsylvania railroad system.

A. B. JONES.

In addition to the development of closer coordination between the military and the Red Cross distribution of supplies, the work which Mr. Jones will undertake includes the care of thousands of French people and their possessions as they are moved from the danger zone to points of greater safety.

A. B. Jones was born at Mt. Holly, New Jersey. He was graduated from Princeton in 1896 and entered the service of the Pennsylvania Railroad Co., where he worked up from rodman to divisional superintendent. In 1902 he went to Akron, Ohio, as division engineer of the Cleveland, Akron & Columbus Railway, which position he held until his resignation in 1908 to accept the superintendency of the Kenmore plant of the Diamond Rubber Co. When the Diamond and the Goodrich companies consolidated, Mr. Jones was made assistant to the manager of the works and later, director of plant administration. In the latter part of 1917 he was made a member of the Akron Board of Health, and in March, 1918, was elected second vice-president of The B. F. Goodrich Co.

Mr. Jones' selection for service with the Red Cross adds another to the list of dollar-a-year men in the service of the Government.

PERSONAL MENTION.

Harold O. Smith, formerly president of the J. & D. Tire Co., Charlotte, North Carolina, has sold his interest to William F. Smith, who succeeds him in the presidency.

W. A. Miller, who has had experience in social service work in Cleveland, Ohio, and was fourteen years in Y. M. C. A. work at Culver Military Academy, has been appointed secretary of the Social and Athletic League of The Federal Rubber Co., Cudahy, Wisconsin. In addition to superintending all activities of the League, he will serve as editor-in-chief of "Extra Service," the company's house organ.

H. H. Hubbard, formerly district manager of the United States Tire Co., at Minneapolis, Minnesota, has been appointed district manager of the company at 1612 McGee street, Kansas City, Missouri, succeeding E. W. Bailey, resigned.

Garfield List, formerly manager of the branch of the United States Tire Co., at Philadelphia, Pennsylvania, succeeds S. S. Poor as district manager in that city, at 329 North Broad street.

R. A. McComb, former manager of the Pacific Coast Stamp Works, Portland, Oregon, now owns the business.

Henry J. Conroy has been appointed general manager of the Alfred Hale Rubber Co., Atlantic, Massachusetts, succeeding A. A. MacLaren, resigned. Mr. Conroy was formerly with the Bay State Insulated Wire Co., Hyde Park, Massachusetts.

O. D. Upton has been appointed district manager of the Buffalo, New York branch of The Republic Rubber Corp., Youngstown, Ohio, with headpuarters at 749 Main street, Buffalo.

O. D. UPTON.

F. D. Kinney has accepted a position as mechanical engineer with the Tyer Rubber Co., Andover, Massachusetts.

George F. Munsa has been appointed district manager of the Thermoid Rubber Co.'s Chicago branch at 2009 South Michigan avenue, succeeding the late D. O. Pohlman, deceased. Mr. Munsa was formerly the representative of the company in the West and Southwest, with Kansas City, Missouri, as headquarters.

A. H. Berwald is the advertising manager of the Du Pont Fabrikoid Co., manufacturer of artificial leather and rubber cloth, a subsidiary of E. I. du Pont de Nemours & Co., Wilmington, Delaware.

L. B. Steele is the advertising manager of the Du Pont & Harsion Chemical Works, Wilmington, Delaware, manufacturer of rubber-makers' white pigment.

W. J. Glendenning, well-known in the rubber-asbestos-balata manufacturing industry, has opened an office at 105 West 40th street, New York City, as a consulting engineer to the trade.

JOHN D. ERTEL.

John D. Ertel has been made office manager of the New York City branch of the Kelly-Springfield Tire Co., after five years' experience as office manager for the same concern in its branch offices at Philadelphia, Pennsylvania, Chicago, Illinois, and Minneapolis, Minnesota. Before coming to the Kelly-Springfield company he was with the Firestone Tire & Rubber Co., Akron, Ohio, as traveling auditor and later as assistant manager of its Philadelphia branch. His experience has given him broad training in systematizing and office management as well as in selling tires.

E. G. Upchurch has been placed in charge of the factory sales branch of the Sterling Tire Corp. at Cleveland, Ohio. He is succeeded as the company's sales manager in Hartford, Connecticut, by Waldo Carlson.

E. C. Shaw & Co., 309 Main street, Cincinnati, Ohio, have purchased the rubber stamp business of A. S. Black in the same city.

Elmer Benny has been appointed sales manager of the Sterling Tire Corp. in Boston, Massachusetts.

Lewis Z. McKee succeeds Joseph White as manager of the Sterling Tire Corp. in Brooklyn, New York.

C. S. Boom will have charge of the export business of the Sterling Tire Corp. in the West Indies and in Central and South American countries. He is a native of Curaçao, Dutch West Indies, and has traveled extensively in the southern hemisphere for other business firms.

Arlington U. Betts, formerly an important rubber cement manufacturer of Toledo, Ohio, and more recently Governor of Albay Province, Philippine Islands, is now head of the Betts Coal Co., on the island of Bantan in the Philippines.

W. C. Brooks, formerly manager of the branch of The B. F. Goodrich Rubber Co., Vancouver, British Columbia, has succeeded L. E. Warford, now in a United States Military School of Aeronautics, as advertising manager of the company's branch at Seattle, Washington.

Edward I. Aldrich, sales manager of the Hood Rubber Co., Watertown, Massachusetts, has announced his candidacy for Governor's Council, at the coming elections in Massachusetts.

James B. Olson has associated himself with the Okonite Co., 501 Fifth avenue, New York City, bringing to that firm a long experience in the insulated wire business.

Announcement is made of the promotion of C. K. Whidden to the position of assistant manager of the motor-truck tire department of the United States Tire Co., New York City. For several years he had charge of the motor-truck tire sales of that company in the Philadelphia district.

John W. Sauter, for twelve years with the sales organization of The B. F. Goodrich Rubber Co., has been made manager of the company's branch at 1414 North Third street, Harrisburg, Pennsylvania, succeeding William F. Mower, now in government service.

ROGER S. HARDY.

IT is rare that one selling tropical products has ever been in the tropics. An exception to that rule is Roger S. Hardy, one of the staff of J. T. Johnstone & Co., the New York crude rubber importers.

ROGER S. HARDY.

To begin at the beginning, Mr. Hardy, a Boston boy, and grandson of the Hon. Alpheus H. Hardy, attended a private school, and in due time secured the Harvard degree of A.B.

After a thorough apprenticeship in the machine shop and factory of the Manhattan Rubber Manufacturing Co., with a taste of clerical work as well, illness in his family called him back to Boston.

A year later, however, he again returned to rubber work, this time as assistant to W. A. Lawrence in the laboratory of the Continental Rubber Co. Here the mechanical process for guayule extraction was perfected.

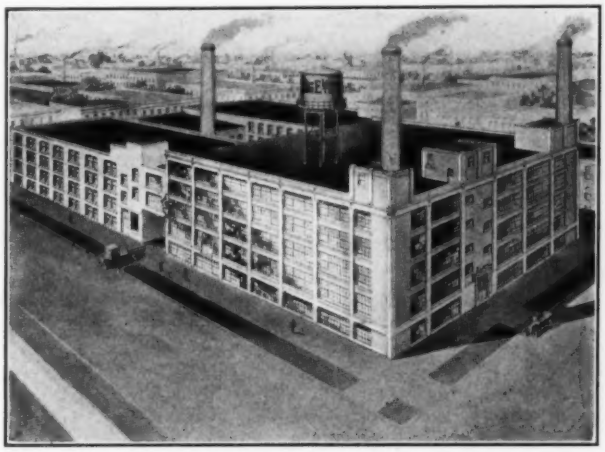
Later he was sent to the great factory in Mexico, where he worked in the physical laboratory, deresinating plant, and the washing, drying and shipping departments, finally becoming mill foreman. An interesting part of his work in Mexico was the investigation of growing guayule in the desert and the methods of gathering, baling and shipping it to the factory.

In the summer of 1907, Mr. Hardy returned to New York and again entered the laboratory to work on rubber refining. His knowledge of crude rubber extracting later secured for him a position with the United Malaysian Rubber Co. at its plant in Borneo. He left for the Far East in June, 1908, and assisted in the erection of the Malaysian's plant at Goebilt in Borneo, and gained a thorough knowledge of the chemical deresinating process. During his stay in the Far East he did considerable exploring in the jungle for Pontianak and gutta percha. He also visited many *Hevea* plantations and studied methods of planting, tapping, coagulating, and the preparation of the various grades of plantation rubber. He remained in the Far East until 1910-1911, when ill health brought on by the climate caused his return to America and the crude rubber business here.

Personally, Mr. Hardy is athletic, quietly energetic, and quite an encyclodepian in his knowledge of crude rubber and its uses.

THE ENLARGED EHMAN TIRE PLANT.

The recent addition to the plant of the Ehman Tire & Rubber Co., Chicago, Illinois, is now fully equipped, and in operation, and the factory, with the enlarged facilities, has a capacity of 3,000 tires per day. As shown in the accompanying



EXPANDING PLANT OF EHMAN TIRE & RUBBER CO.

illustration, the buildings are of modern factory construction and well-fitted for the work. The four-story-and-basement addition immediately adjourning the main factory, has already been found inadequate for the increased business, so that further enlargements are under consideration.

The present labor situation has been a problem that until recently caused considerable anxiety. A satisfactory solution has been found, however, in hiring as far as possible workers experienced in other lines of work which have "trained" their hands. These, both male and female, who are secured to replace men entering service, are given a course in tire making which covers every detail of manufacture. Each student is graduated on individual merit only and those who show proficiency are retained as regular employes.

THE BRUNSWICK-BALKE-COLLENDER CO. ENLARGES ITS TIRE DEPARTMENT.

The Brunswick-Balke-Collender Co., Chicago, Illinois, has recently completed a one-story addition, 100 by 125 feet, to its tire-curing department, in which it has installed modern equipment and ventilating systems. It has also built a two-story-and-basement addition, 80 by 120 feet; the first floor will be used to enlarge its mill room space and is in operation, and the second floor will be devoted to the building of cord tires, while the basement will provide for the enlargement of the hard rubber department. The company has arranged for building a new automobile tire plant, but work on this has not yet been started.

THE RUBBER TRADE IN AKRON.

By Our Regular Correspondent.

IT is stated that at the rate of The B. F. Goodrich Co.'s current business there is little doubt that it will enter the ranks of $1,000,000,000 producers this year, as compared with $87,000,000 last year. The company has developed a margin of profit even higher than the 17.4 per cent of last year. It is hardly expected that net for the second half of 1918 will be quite as high as the $10.40 a share earned for common in the first half of the year, and a net for the year of $18.00 a share would be considered good.

Hundreds of Goodrich employes celebrated the capture of Château Thierry in France with a Victory parade through the heart of Akron, bearing American flags and banners proclaim-

CELEBRATING THE CAPTURE OF CHATEAU THIERRY.

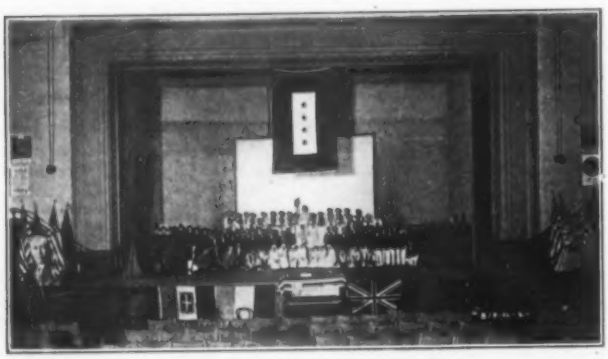
ing the success of the American troops. The paraders broke ranks at Main and Market streets and sang patriotic songs. The whole demonstration, which was the first of its kind during the war, was planned and executed within a few hours.

* * *

A recent dispatch from Columbus stated that the Public Utilities Commission had granted the right to issue $1,500,000 worth of 7¼ per cent twelve-year notes to be delivered to The B. F. Goodrich Co. for money with which to construct a power-house at Windsor, West Virginia. The dispatch also stated that upon the completion of the power plant the Goodrich company is to receive two-thirds of all power developed.

* * *

During the recent War Savings Stamp drive in Akron, Goodrich employees presented an allegorical play before 2,000 Goodrich workers and won the award of merit from the W. S. S.



GOODRICH ACTORS FOR W. S. S.

judges over the Goodyear playlet, a similar performance given the previous evening. The Goodrich show was presented to enthusiastic audiences in five small towns near Akron during the same week.

The B. F. Goodrich Co. is experimenting with the employment of men who are partially disabled, with the intent of employing such workers to a large extent after the war.

In regard to the experiment E. C. Shaw, vice-president of the company, said:

We are doing this without the protection of laws on the statute books of the state because at the very beginning of the war our officials began looking for a solution to the problem that will face all manufacturers when peace is again established, perhaps before. We need not wait for new legislation, for whatever new laws are made must be based upon actual experience to prove that they will be practicable.

There is no occasion for alarm or speculation over what may be the attitude of large manufacturers, for we may rest assured that both the state and the national government will effect such remedial legislation as will make the employment of disabled men not only possible but highly successful.

Mr. Shaw said that the Goodrich company has been experimenting for many months with men who have been disabled in other industries and that the trial is meeting with a large measure of success.

Every department in the Goodrich plant has been equipped with a Thrift-Stamp-vending machine. The Thrift Stamp drive of this company began August 5.

Roy Mathias, of the A. D. O. department of The B. F. Goodrich Rubber Co., left on August 8 for France, where he has been detailed for special service.

* * *

William J. Slater has resigned as pneumatic tire sales manager of the Firestone Tire & Rubber Co., to become general sales manager of The Williams Foundry and Machine Co., Akron, Ohio, maker of tire-building and repairing equipment. Mr. Slater's connection with the Firestone company covers a period of several years, during which time he was successively manager of advertising, sales promotion, and pneumatic tire sales.

WILLIAM J. SLATER.

* * *

H. S. Firestone, on August 12, was the guest of honor at the opening of the new Firestone Park Y. W. C. A. building which with its interior furnishings, he gave to the organization. The structure is three stories high and, in addition to cafeteria, kitchen, rest, and recreation rooms, provides dormitory accommodations for 80 girls.

* * *

H. S. Firestone entertained 400 Firestone superintendents and foremen at his home in Columbiana on August 17. Among the guests outside the Firestone organization were: Henry Ford, Detroit, Michigan; W. M. Mullens, boat manufacturer, Salem, Ohio; and Mr. E. Thompson, representing government balloon activities in which the Firestone organization will soon have an important part in its section about to turn out observation balloons.

* * *

Corporal Albert Stephens and Private Leo W. Dyer, former Firestone employes, are now with Company M, 131st Infantry, and 308th Regiment, Company E, Engineering Corps, respectively, in France.

* * *

The Miller Rubber Co. had an exhibit of sponge rubber and rubber cement at the convention of the International Stamp Manufacturers' Association in Detroit, Michigan, in June. L. H. Mercer was in charge.

* * *

Louis Mueller, who has been connected with the Kelly-Springfield Tire Co. nineteen years, has recently been promoted to the position of superintendent of the company's factory at Akron.

The Marathon Tire and Rubber Co., Cuyahoga Falls, is manufacturing molded goods extensively, particularly soles and heels, in which department it has created considerable business. In addition to these lines, it is also specializing on a belt for men's wear.

* * *

The sales of The General Tire & Rubber Co. showed an increase during the first six months of the fiscal year begun December 1, 1917, of 120 per cent over those of the corresponding period of the previous year. During this time it has sold goods at the rate of $3,500,000 for twelve months. This does not include a large proportion of its war business, orders for considerable of which were received after July 1.

* * *

Fifty representatives of the smaller rubber companies of Akron and nearby cities met at the City Club at noon Thursday, August 13, to discuss the so-called fifty-fifty rubber ruling recently announced by the War Industries Board at Washington. The smaller companies have been more affected, not having contracts with the Government, and one manufacturer said his plant would have to lay off some of the men or close one day a week if the ruling stood.

* * *

At a conference of rubber manufacturers held in Akron on August 15, George W. Henne, president and general manager of The Mansfield Tire & Rubber Co., Mansfield, was elected chairman of the executive committee of the Rubber Manufacturers' Association. Mr. Henne suggested that work in rubber factories be confined to getting out war orders. His own plant has been turning out 50 per cent war orders and he stated that the total output would be curtailed one-half during August and September. This is in accord with the recent ruling of the War Industries Board in Washington, limiting production during those months.

* * *

Track teams representing ten big industrial firms of the Middle West participated in the first Industrial Track and Field Meet on August 10 at the 40-acre athletic field of The Goodyear Tire & Rubber Co. In a program of sixteen events, including dashes, runs, hurdles, jumps, shot-putting, discus and javelin throwing, the Goodyear team secured a total of 30 points, the other Akron teams ranking as follows: Firestone Tire & Rubber Co., 21; The B. F. Goodrich Co., 20. As a result of the meet, plans are now being made for an Industrial Athletic Association of America, to include twenty or more of the greatest industrial athletic organizations in the country, to compete annually for the industrial championship.

* * *

C. R. Bollinger, of the Goodyear Tire & Rubber Co., has just returned from a two-year stay in Argentina, South America. Mr. Bollinger believes the United States will stand a good chance of getting South American business after the war if manufacturers will establish branches and try to adapt themselves to the South American ways of doing business. Money is plentiful in Argentina at present, there being no place to spend it. The country depends almost entirely on imports for manufactured goods, and because of the interrupted shipping relations with other countries there is a scarcity of many manufactured articles. The manufacturers in this country will have to learn to extend long credits, since this is the biggest weapon in the trade war by which Germany formerly secured South American business. They must also, in order to meet German competition, be ready to make up special goods instead of selling only standardized goods as in the past. Mr. Bollinger said that the profits derived from business in South America are large and money can be made easily and quickly under normal conditions.

Dr. Clyde Leeper, medical director of the social work of The Goodyear Tire & Rubber Co. and in charge of the anti-tuberculosis work of the Red Cross, has been appointed one of the physicians in charge of anti-tuberculosis work in France. Dr. Leeper has been in Akron about two years. Previous to coming here he had had long experience in this line of work. He is a graduate of Lyola University, Chicago.

I. R. Martin, athletic director for the Goodyear company, has gone to Boston, Massachusetts, where he will enter on a three-months course of training at the Massachusetts Institute of Technology for a commission in the Naval Reserve. Mr. Martin has long been enlisted in the Reserve and has been expecting a call to report for service for the past four weeks.

THE RUBBER TRADE IN BOSTON.

By Our Regular Correspondent.

THE Rubber Mutual Liability Insurance Co. has been organized in this city to take over from the rubber mills in this state the handling of business connected with workmen's insurance and compensation on the mutual plan as provided by the state laws of Massachusetts. This company is largely made up of members of the various corporate bodies included in or affiliated with the United States Rubber Co., as will be noted by the following list of officers: president, Lester Leland; vice-president, H. H. Nance; treasurer, H. P. Ballard; secretary, Eben F. Dewing; assistant secretary, John A. Nowicki; managers, Hamlin & Co., New York City. The board of directors consists of Lester Leland, H. H. Nance and I. F. Burnham, Boston; H. P. Ballard, Malden, and W. H. Gleason, Chelsea, this state, and W. G. Parsons, H. R. Mooney, Frank Kutzelman and Emile Newman, New York City. The office of the corporation is at 130 Essex street, Boston.

* * *

Alfred A. Glidden, of the Hood Rubber Co., was a forceful speaker at a conference called by the local chairman of the War Industries Board in this city July 31 for the purpose of discussing the new regulations regarding government control in the recruiting and distributing of labor for war industries. He asserted that labor conscription would come if the employers do not obey the regulations, and told manufacturers that if they attempt to evade the President's proclamation coal will be denied them and other coercive measures adopted to bring them into line. This information had been given him on a recent visit to Washington, he said. "It's the last opportunity of employers and employes to control themselves voluntarily," he concluded. "If they don't do this the Government will step in."

* * *

The Panther Rubber Co. has added a fourth factory, as was mentioned in the Trenton letter in THE INDIA RUBBER WORLD last month. This latest acquisition is the plant formerly owned by the American Rubber Co. in Trenton, which the new owners will bring up to date, and equip for the manufacture of rubber heels and fiber heels, in which line its trade has outgrown its Stoughton, Massachusetts, plant, which, however, will be continued as formerly. The Chelsea, Massachusetts, plant is running to capacity, coating Gem insole duck and other fabrics. The company also has a heel and sole factory at Sherbrook, Canada, whence it supplies large amounts of its specialties to the Canadian footwear trade.

* * *

The Franklin Rubber Co., whose retail store at 134 Federal street, was badly damaged by fire some months ago, has moved from its temporary quarters back to the old stand, which is now a new and handsome store, modern in every sense of the word, and admirably arranged for the retail as well as the wholesale end of the business.

* * *

The employes of L. C. Chase & Co. to the number of 800, were present in a body at an exhibition of the motion-picture, "My Four Years in Germany," one night last month. The firm is

doing a large amount of work for the United States Government, and this film, which related to the experiences of the United States ambassador to Germany previous to and during the war, was one which tended to increase the enthusiasm of these war workers in their daily duties. The delegation made a fine showing, each wearing a small American flag as a symbol of the spirit in force at the factories.

* * *

In this letter last month it was stated that the Albert Hale Rubber Co., formerly of Boston, had purchased the land, buildings, good will, patents and trade-marks of the Atlantic Rubber Co., at Atlantic. The purchase, however, did not include the bills receivable, the bills payable, made-up goods, raw materials, nor the capital stock of the Atlantic Rubber Co.

* * *

The plant of the Elastic Lace and Braid Co., at Chelsea, which was recently damaged by fire, has been purchased by the Dudley Mills, which are now manufacturing shoe laces, mainly for a leading Boston firm handling shoe factory supplies.

* * *

Kidder, Peabody & Co., the well-known Boston bankers, and associates, have taken over from Willett, Sears & Co., the controlling interest in the Boston Belting Co. The acquisition of the majority stock of the Boston Belting Co. by Willett, Sears & Co. was announced in THE INDIA RUBBER WORLD October 1, 1917, and it was expected that they would operate the concern and greatly develop this pioneer rubber business. The new owners are not yet in position to state their plans for the future.

* * *

Corliss Wadleigh has been appointed district manager of the Boston branch territory of the Republic Rubber Corp., Youngstown, Ohio, with headquarters at 863 Boylston street.

THE RUBBER TRADE IN RHODE ISLAND.

By Our Regular Correspondent.

THE plant of the National India Rubber Co., at Bristol, closed on August 16 for an indefinite period, following an attack made by riotous Portuguese strikers upon nearly 4,000 employes who, two days before, had returned to their work after being out on strike for a month.

* * *

The strike at the Alice Mill of the Woonsocket Rubber Co. on August 19 entered on its sixth week, with 1,700 operatives out, while at the Millville plant of the same company the striking bootmakers, at a meeting held August 19, unanimously voted not to return until there is an adjustment of the situation by the United States War Labor Board which has the Millville strike under consideration. The Millville plant employs 800 persons.

While it has been repeatedly contended by the employes that there is no connection between the strikes in the three plants, it is very significant that the demands are identical—a 25 per cent increase and the abolition of the 10 per cent bonus system.

Although the management of these three plants, all of which are subsidiaries of the United States Rubber Co., refused to grant the demands, a disposition was expressed to assist the employes in every way possible to meet the burdensome conditions that have arisen through the exigencies of the times.

* * *

After much consideration, the National India Rubber Co. had announced its decision to maintain a cooperative store in connection with the business, for the benefit of employes. The company had said that it would either erect or purchase a building and appoint a manager for a store where everything would be sold at cost to the employes, less the ordinary expenses of handling. The system, which is followed in other places, was to be established within a month, it was stated. But now that the strike has indefinitely closed the plant the entire project is being held in abeyance.

The management had also made arrangements to assist the employes in meeting the increase in railroad fares that became effective a few weeks ago.

* * *

The Woonsocket Rubber Co. has installed restaurants for the accommodation of the employes at the Alice Mill, and also at the Millville plant. Both restaurants have been established under the direction of Waldo L. Kelly, the company's purchasing agent, and each has been fitted with up-to-date paraphernalia for cooking, keeping hot and serving wholesome food at reasonable prices. There are seating accommodations at the Woonsocket mill restaurant for 500 persons and at the Millville plant for several hundred. Later, similar restaurants will be installed at the Bristol plant of the National India Rubber Co.

* * *

Miss Leila J. Loggie, who has been nurse at the Woonsocket Rubber Co.'s plant at Woonsocket, has resigned and left a few days ago for duty at Camp Nathaniel Greene, North Carolina, for duty as a Red Cross nurse.

* * *

Howard C. Coates, who at the time of his enlistment a year ago was employed at the plant of the Davol Rubber Co., Providence, was killed in action on July 21, during the great Allied counter offensive in the Marne salient in France. He was a member of the 103d Machine Gun Battalion, and has a brother, Charles E. Coates, in the same unit and another brother, William H. Coates, in the Medical Department, Twelfth Engineers, of the Railway Brigade, in France. He first went to Camp Bartlett, Massachusetts, for training, and on October 3 went overseas.

* * *

A fourth dividend of 10 per cent, payable after August 6, was declared early in the month by the referee in bankruptcy in the case of the Consumers' Rubber Co., Bristol, which was forced into financial straits following the suspension by the Atlantic National Bank, Prividence, in the spring of 1913.

* * *

Bernard H. Miller, treasurer of the Broadway Tire Exchange, Providence, was one of the draftees that left here for Camp Upton, New York, with the last increment.

* * *

Arthur A. Almon, formerly of Almon & Gorman, and recently with the Rhode Island Tire Co., is now in charge of the vulcanizing department of the Murphy Tire & Rubber Co., 166 Fountain street, Providence.

* * *

The Franklin Vulcanizing Co., 8 Franklin street, Providence, is being conducted by August Charles and Gitz Boffi, according to their statement filed at the City Clerk's office.

* * *

The Holbrook Rawhide Co. is making extensive alterations to its three-story building, 748 North Main street, Providence.

THE RUBBER TRADE IN TRENTON.

By Our Regular Correspondent.

THE seven Trenton automobile-tire manufacturers are facing a serious situation through the government order restricting the output of pneumatic tires during the month of August and September. The order will work a particular hardship upon manufacturers whose business has been greatly increased this year, and Trenton tire makers can take care of approximately only one-third of their present demands. Some tire manufacturers have secured government business to about 30 per cent of their present output and will not feel the curtailment as keenly as the smaller manufacturers. The large companies will be able to operate to about 80 per cent of capacity while the smaller plants will be limited to 50 per cent. On account of the new restriction, between 1,400 and 1,500 tire makers in Trenton have

been laid off since August 1, when the new ruling went into effect. These are the highest paid workers in the rubber industry and have been making $7 to $8 a day. These men can in some measure be absorbed by the mechanical and other departments of concerns such as the Empire, Thermoid, United & Globe, Essex and Acme companies, which make a variety of rubber goods. Some of the tire makers, when offered jobs in other lines of work, scorned the smaller pay—$5 to $6 a day—and have left altogether.

* * *

An attempt was made recently to burn the plant of the Sanhican Rubber Co., situated at Brookville, in the west section of Trenton. Harry Wallace, the night watchman, heard a noise on the second floor and when he went to investigate, found two men climbing out of a window. A few minutes later a fire was discovered in one corner of the same floor. Wallace chased the two men down the river bank and fired shots at them, but was unable to capture them.

* * *

William J. B. Stokes, vice-president and treasurer of the Joseph Stokes Rubber Co., treasurer of the Thermoid Rubber Co. and vice-president of the Home Rubber Co., and Charles H. Baker, former president of the Empire Rubber & Tire Co., have been spending several weeks motoring through Canada.

* * *

The Essex Rubber Co., Inc., is working on a contract for the Government for 50,000 olive drag tubular stockinet gas-mask hose for the United States Army.

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The Tire Shop, 136 East Hanover street, has filed a certificate of dissolution in the office of the Secretary of State upon the consent of the stockholders. The Tire Shop was started by William A. Bagby and Christian H. Bower.

* * *

During the recent hot spell in Trenton several of the larger rubber manufacturing plants were forced to operate on part time and allow employes to work during the morning only. Several rubber workers were overcome by the heat at the plant of the Lambertville Rubber Co.

* * *

The Globe Rubber Tire Manufacturing Co. has taken out a permit to erect a garage to house all the company's auto trucks.

NEW INCORPORATIONS.

Allen & Hebard Co., May 31 (Oregon), $10,000. R. E. Allen, L. Hebard, M. Helgstad—all of Multnomah County, Oregon. Principal office, Portland, Oregon. To engage in a general automobile and automobile supply business.

American Tire Filler Corp., July 30 (New York), $35,000. S. Yerman, 721 Eastern Parkway, Brooklyn; A. D. Kubie, 329 East 69th street; D. Kohn, 218 East 70th street—all of New York. To buy and sell "Essenkay," an auto tire filler.

Bay Ridge Radiator & Tire Works, Inc., August 6 (New York). $5,000. M. Raifman, M. Adelman—both of 41 Lewis avenue, and J. Oglinsky, 111 Lee avenue—all of Brooklyn, New York. To repair radiators and tires.

Cravatex, Inc., August 6 (New York), $10,000. J. B. Weber, 200 West 95th street, New York City; A. H. Powell, 1758 14th street, Brooklyn; E. R. Stites, 22 East 31st street, New York City—all of New York. To manufacture waterproof apparel.

Cyclops Rubber Co., July 26 (Delaware), $2,000,000. C. A. Cole, Hackensack, New Jersey; A. R. Oakley, Pearl River; P. E. Britsch, 1528 Bedford avenue, Brooklyn—both of New York. Principal office with the Registrar & Transfer Co., 900 Market street, Wilmington, Delaware. To handle and deal in rubber and any by-products thereof.

Dependable Tire & Rubber Corp., August 8 (New York), $650,000. S. Johnstone, F. Dobmeier, M. H. Shaft—all of Buffalo, New York. To manufacture tires and rubber goods.

Discount Tire & Tube Co., Inc., July 29 (New York), $10,000. M. Rosenheck (president), W. A. O'Dea (vice-president), M. G. Kelly (secretary and treasurer). Principal office, 120 Lake street, Elmira, New York. To deal in high-grade tires and tubes.

Eagle Packing & Rubber Co., Inc., August 14 (New York), $25,000. J. Gray, Grantwood, New Jersey; H. W. Austin, 123 Chambers street; C. E. Sutherland, 15 Park Row—both of New York City.

Eagle Wheel & Tire Corp., The, July 18 (New York), $10,000. J. B. Theiss, 39 West 127th street; J. E. Harrigan, 415 Lexington avenue; G. S. Gallagher, 672 St. Nicholas avenue—all of New York City. To conduct general automobile and accessories business.

Everwear Rubber Co., January 24 (Wisconsin), $200,000. A. Steele, 296-8 Reed street; F. C. Bunde, 224 24th street; G. W. Kliegel, 335 17th avenue—all of Milwaukee, Wisconsin. To manufacture, buy, sell, and deal in rubber goods of all kinds.

Inner-Seal Co., July 3 (New York), $50,000. M. Rosenbloom, W. Levinson—both of 108 Cornwall Building; C. H. Dygert, 200 Monroe avenue—all of Rochester, New York. To manufacture puncture mending compound.

Java Trading Corp., August 15 (New York), $100,000. R. Matthews, E. M. Souza, S. Black—all of 111 Broadway, New York City. To import and deal in rubber, etc.

Keystone Tire Co., August 5 (Delaware), 1,000 shares capital stock without nominal or par value. C. J. Rimlinger, S. E. Dill, M. V. Mahrer—all of Wilmington, Delaware. Principal office with the Corporation Trust Co. of America, Du Pont Building, Wilmington, Delaware. To manufacture, sell, and deal in rubber tires, tubes, rims, and accessories for automobiles.

Lambert Trublpruf Tire Co. of New York, Inc., July 11 (New York), $25,000. J. C. Coyle, Peoria, Illinois; J. W. Coyle 192 Schermerhorn street, Brooklyn, and W. H. Ford, Schenectady—both of New York. To manufacture tires of all kinds.

McKay Rubber & Leather Co., July 8 (California), $50,000. A., D., J., and W. D. McKay, and W. Fleming—all of Sacramento, California. To conduct a wholesale and retail rubber and leather business.

Queensboro Tire & Radiator Repair Co., Inc., August 5 (New York), $2,500. A. M. Dunham, 150 Bergen avenue; J. Weinstein, 199 Rockaway avenue; D. K. Morrell, 34 Hardenbrook avenue—all of Jamaica, New York. To repair auto tires and radiators.

Ream Co., Robert L., July 17 (Delaware), 150 shares capital stock without nominal or par value. F. M. McKelvey, H. W. K. Smith, J. T. Akers—all of Pittsburgh, Pennsylvania. Principal office with the Capital Trust Co. of Delaware, Dover, Delaware. To buy, sell, handle and deal in belting, and mechanical rubber goods.

Rubber Distributing Co. of Michigan, June 10 (Michigan), $50,000. G. W. Odell (president), C. W. Truxell (vice-president), J. W. Ridge (secretary and treasurer). Principal office, Detroit, Michigan. To sell "South Bend" tires and tubes manufactured by the International India Rubber Corp., South Bend, Indiana.

State Tire & Rubber Co., Inc., July 30 (New York). S. M. Reiss, R. M. Kern—both of 35 Nassau street; E. Shatz, 153 Manhattan avenue—all of New York City. To buy, sell, and deal in rubber tires, automobile tires, and tubes.

Wichita Tire & Supply Co., Inc., May 28 (Kansas), $25,000. F. W. Martin (president), H. E. Case (secretary), W. J. Brookman (treasurer and manager). George and L. H. Martin. Principal office, 203 West Douglas avenue, Wichita, Kansas. To conduct a retail tire and accessory business and do vulcanizing.

The Rubber Trade in Great Britain.

By Our Regular Correspondent.

ONE of the interesting features about which plantation rubber shareholders accustomed to fat dividends call a gloomy situation, is the strength of the premium on Brazilian Fine. Judging by some recently published remarks of H. P. Stevens, this fact is somewhat disconcerting to those chemists who have contended for years that prejudice alone has caused the best plantation rubber to be ranked by manufacturers second to Brazilian Fine Hard Pará. Dr Stevens rightly points out that in certain goods for which long life is desired and expected, the first cost of the rubber is not the all-important point, hence the disinclination of the manufacturer to depart from his old established practice. This disinclination might have been overcome by now, Mr. Stevens contends, if a thorough investigation of the properties of plantation rubber and Fine Pará from every standpoint had been undertaken. Such an investigation, I may remark, would be rather a large undertaking because every standpoint would mean the manufacture of a variety of goods such as cut sheet, card clothing, elastic thread, cables, etc. For many goods such as rubberized textures and a variety of mechanicals, especially where long life is not necessary or expected, plantation rubber has already proved its worth compared with Fine Hard. If the suggested investigation is to be made, the sooner it is begun the better, as none of its present advocates will be alive to see the final results should it be decided that utility and longevity are to be gaged from the behavior of goods when in ordinary use, rather than be estimated from rapid laboratory tests. We are a somewhat slow-moving race and it is not at all a difficult matter to find rubber manufacturers or their chiefs of staff who look askance at curves and shy at ordinates and abscissae, preferring the safer though more tedious tests of their apprenticeship to the trade. Another interesting point is the renewed attention which is being paid to various native rubbers such as Congo ball, whose early extinction as a factor in the rubber market has been greatly prophesied of late.

It is to be hoped that the amity now existing in the general relations between this country and America will not be imperiled by factors in the raw rubber market, but there is a strong feeling in certain quarters that the American restricted imports of raw rubber will be taken advantage of by astute American importers to get the Eastern plantation crop at their own price. There is certainly plenty of rubber amounting to thousands of tons at Singapore to be purchased at a low price, the price having fallen owing to the American restriction. As the restricted imports came into operation at the end of April, it is considered rather odd here that the May imports exceeded those of April.

Manufacturers on this side have now no fear at all of a rubber shortage or of higher prices. Though they have generally covered their future prospective requirement at two shillings per pound, there are few if any of them who have not got rubber to come in at 2*s.* 8*d.* and 2*s.* 6*d.* per pound. As they have no need to buy at present, they say it would suit them very well if the present quotation went to 2*s.* 6*d.* per pound, as it would stop buyers of rubber goods from complaining that the manufacturers are not treating them fairly. For costing purposes a manufacturer usually averages his purchases and it is a fair surmise that 2*s.* 4*d.* to 2*s.* 6*d.* would be a common figure for to-day's costings, though the man who reads the latest quotation in his daily paper may think the figures should be two shillings.

OXIDE OF TITANIUM.

I read some months ago with considerable interest an account of an American patent connected with the use of white oxide of titanium as a novel component of rubber mixings. I forget exactly what its properties were stated to be, but I remember that important claims were made for its utility and not merely as a white filler. Titanium is widely distributed in the rocks of the earth's crust, but usually only in small quantities. The ore from which its salts are made is the natural oxide called rutile, a dark-colored mineral. The principal, if not the only makers of titanium salts in Great Britain, are Peter Spence & Sons, Limited, of the Manchester Alum Works, and I applied to them for a sample of white titanium oxide and also brought the American patent to their notice. They said, however, that they had not so far made any oxide of titanium and they were quite sure that one could not buy a pound of it in the country. In this respect, therefore, we are behind America, where I understand it is now being made on quite a large scale.

THE LABOR QUESTION.

The extended age for service has affected rubber works to a small extent only, as the majority of the workers are engaged very largely in government work. A more serious matter has been the influenza scourge with which so large an area in Europe is afflicted. One comparatively small concern reports sixty hands off at the same time in the gas-mask making-up department. Now that the employment of women to replace men in departments of works where men alone used to be employed has lasted for two or three years, managers are in a position to speak as to the economic effects of the substitution. Here as in most branches of human affairs one finds differences of opinion. As a rule, the wages paid to women are 25 per cent less than those paid to men and with a good many manufacturers this point carried great weight at first. Now I find it pretty generally the case that they would quite willingly pay the 25 per cent more to be able to employ men again. This is more especially in regard to the heavy work on mixing rolls, presses, etc., and taking all the facts into consideration I see nothing to be surprised at in this opinion. In many cases women were put onto work for which they were unsuited, apparently for the reason that they had proved successful in other and lighter work. With regard to spreading there is much difference of opinion, but it is difficult to get at the relative value of the sexes in this work. I am informed that it is a common thing where men and women spreaders are at work in the same factory for the women to turn out a greater yardage per week; but as a manufacturer was careful to point out to me, there was no proof that the class of work was the same. It might be said that the foreman—always male, not female—would give the easiest and least important work to the women and this might easily account for their increased yardage. Anyway, it is not an easy matter to generalize upon, as so much depends upon circumstances. Perhaps the best way to arrive at the general opinion of the trade would be the issue by the India Rubber Manufacturers' Association of a referendum form to the manufacturers.

Turning to another side of the labor question, what are known as Whitley Councils are being formed for various trades, to act for the adjustment of wages and to prevent strikes. The first meeting of the Joint Industrial Council for rubber manufacture was held in London on July 17. J. T. Goudie, chairman of the India Rubber Manufacturers' Association, was elected chairman and Councillor Jack Jones of London, vice-chairman, representing labor. It was decided that a scheme for setting up district councils should be prepared by a sub-committee, for presentation at the next meeting. It is understood that work in the same direction is being done in America.

COMBINED SULPHUR AND RECLAIMING.

I remember being told about thirty years ago that a process for removing the combined sulphur from vulcanized rubber so as to reproduce raw rubber would be worth millions. This problem is not yet solved and I am by no means certain that its solution would be worth so very much. All chemical processes cost money and take time. Moreover, the great bulk of vulcanized rubber contains only a certain amount of rubber, and chemical processes may easily be upset or largely affected by the mineral substances present with the rubber. But it is the prospect of plentiful supplies of raw rubber at low prices that seems to be the deciding factor from the commercial point of view, though the problem will no doubt continue to attract the scientific worker. I believe the reclaiming industry was never so busy as at the present time, and its products are continually finding a wider range of application. This progress has been attained with reclaimed rubber which still retains its combined sulphur and there is no reason to suppose that its removal is a matter of urgency or necessity. I am constrained to these reflections by reading the work recently done by Repony, whose numerous experiments have resulted in success being attained in one direction. He has succeeded in removing the sulphur by the action of zinc powder and hydrochloric acid, though this is done only at the cost of substituting chlorine for the sulphur. So far, therefore, the result is of more scientific than technical interest.

MAGNESIUM OXIDE.

Like the man who had been speaking prose all his life without knowing it, the rubber manufacturer is now becoming aware that he has been using catalysts in his goods for a long time, though they did not appear in his formula books under that name. The use of lime as an accelerator in vulcanization, especially where the permissible amount of sulphur is limited, is of course of old standing. It has been by slow stages only that the general use of magnesium oxide in place of lime has come to pass and even now its use is general only where it has been specified. The quantities used correspond to those formerly associated with lime and the new business, therefore, is not such as to warrant the entry of new firms into the magnesia trade, especially as there has been a considerable falling off in the use of the hydrated carbonate of magnesium which loomed so largely in the solid cab tire formula of a decade ago. This rise in favor of magnesium oxide seems to be a blow against the numerous organic accelerators or catalysts. Whether anything derogatory to the latter has transpired now that the results of two or three years' experience are available, I do not know, but it would be decidedly interesting if some large works in England or America published their experiences.

SIR T. O. CALLENDER.

Among the recent birthday honors was a knighthood conferred on T. O. Callender, managing director of Callender's Cable & Construction Co., Limited. At the annual meeting held in July, the new knight, who presided in the absence of the chairman, said that the works is fully employed with government business, though, of course, its large overseas business is under a cloud at present. In enlarging on this point he said that the incidence of the excess profits tax would act adversely on the company after the war, as it is depriving it of cash which will be necessary in rebuilding its business throughout the world. It is different, he said, in Germany, where its competitors are allowed to accumulate reserve which will be immediately available for after-the-war trade. The dividend declared was 25 per cent, which included a bonus of five per cent. Last year the total distribution was 20 per cent.

TRADE NOTES.

T. H. Roberts has retired from active participation in the management of the Wood-Milne Co., Limited, of Leyland, and has gone to live in the South of England. A solicitor by profession, it is now many years since Mr. Roberts saw the possibilities of the rubber heel and supplied the capital for the development of the business. Heel pads are now by no means the only product of the works which is now largely engaged with the manufacture of the Wood-Milne tires.

The Revolite Co., Limited, of Cambridge street, Bradford Road, Manchester, has recently changed its ownership, as Mr. Reed, the late proprietor, has sold it to Mr. Coffey, of London. Mr. Reed, however, still retains a connection with the works in the position of general manager, while Mr. Crozier is the resident managing director. The principal business is rubber heel pads, and of late rubber soles have been made a specialty.

The Lancashire Rubber Co., Limited, of Pollard street, Manchester, has also changed hands, Mr. Pogson, of Salford, having purchased the concern from Mr. Levi. This business also is mainly concerned with heel pads.

The Ioco Proofing Co., Limited, of Netherton Works, near Glasgow, is making extensions including a boiler house, store, and laboratory. The company commenced business some years ago in the oilskin line, but since the war has been largely engaged in rubber proofing in connection with government contracts.

SUFFICIENT RUPEE EXCHANGE ASSURED.

The Secretary of the Treasury McAdoo has arranged with the British Government for a supply of rupee exchange sufficient for an indefinite period to finance imports from India reasonably required for civil or military purposes of importance in connection with the prosecution of the war. The sale of rupee exchange will, as heretofore, be administered through the Federal Reserve Board. The price will be 35.73 cents per rupee for telegraphic transfers.

RUBBER INDUSTRY PROGRESS IN JAPAN.

PRESS reports pertaining to the industrial and commercial activities of Japan continue to bear evidence of that nation's enterprise and determination to secure for itself a permanent and prominent place in world trade.

While Japan is naturally eager to do business with all the world, it appears to be concentrating its main efforts on Asiatic countries—particularly China—and South America. The reasons are obvious. First, it naturally stands a better chance in those countries when competing with European or American goods; then, neither South America nor the Oriental countries offer the difficulties to settlement that rule in Europe, America and the British overseas dominions.

Japanese companies are literally over-running China, financing industries, forming corporations to develop her resources and building up trade relations generally. The importance of adequate banking facilities has been fully realized and branch banks are being established at suitable centers. Thus the Nippon Kogyo Ginko, which has opened a branch at Kobe, will specialize in Chinese business, and the Bank of Formosa, already having a branch in South China, is planning another in Indo-China. The Bank of Korea has also been devoting much attention to China, and in order to extend its activities in this direction is preparing to establish a branch at either New York or London.

Dealings with South America are being carefully fostered and banking and commercial missions have recently visited the various republics there. Of Chile it was said that it is Japan's chief market in South America. Trade with Argentina is also developing rapidly. During 1916 and 1917 there were large increases in imports of Japanese goods and a number of Japanese salesmen have taken orders of considerable value for rubber goods of all kinds, electrical goods, and for many articles that formerly came from Europe. Recently a branch of the Yokohama Specie Bank was opened at Buenos Aires; new shipping

routes have been established to this port, as well as to Rio de Janeiro, and it is expected that there will soon be monthly sailings between South America and Japan.

Enterprise in Malaya should also be noted, especially with regard to the rubber industry.

It is reported that besides such rubber-producing companies as Mitsui and Sangokoshi, the extent of whose undertakings is not known, there are nine plantation companies, particulars concerning eight of which follow:

	Capital.	Shares.	Amount Paid Up.	Dividend.	Organized.	Acreage.	President.
The Nittoh Rubber Co., Limited	$1,000,000	$25	¼	10%	1917	7,000	S. Ono.
The Nanyo Gum Co.	500,000	25	whole	18%	1911	2,600	I. Nagano.
The Malay Koshi	500,000	25	whole	25%	1911	2,023	S. Hoshino.
The Malay Gum Plantation Co.	250,000	25	whole	4%	1913	2,482	T. Asada.
The Okura Gum Co., Limited	250,000	25	whole	6%	1911	1,029	T. Kasamatsu.
The Asahi Gum Co., Limited	300,000	25	whole	3%	1911	1,026	T. Tomoro.
The Jokore Gum Co., Limited	250,000	25	whole	nil	1912	917	T. Okabe.
The Nisshin Gum Co., Limited	100,000	..	.....	...	....	...	K. Nakajima.

Of the above, the Nittoh Rubber Co., Limited, commenced operations in 1917 as a small enterprise with a capital of $75,000 which was increased to $1,000,000 in 1918. The profits in the last half of 1917 amounted to $15,000, giving shareholders a dividend of 10 per cent. The company's estates are situated in Layang Layang, and Rengam, Malay Peninsula, and as the age of the trees range from one year to eight years, the yield is still rather small, being about 200,000 to 210,000 pounds a year. The president of the company, owner of three steamers of 3,000 tons displacement each, is Shunichi Ono, and the managing director is Mr. Itaikanbei.

This company, whose headquarters are in Oita, a rising industrial town in Japan, is seeking the cooperation of American rubber manufacturers, with a view to establishing a rubber goods factory there on a large scale to supply the entire East, principally China, India, and Russia. The site of the town appears to be favorable for overseas trade, as it is on the picturesque inland sea coast of Kyusu—about 100 miles from Moji—which is connected with the Pacific ocean by means of the channel of Hayasui. The citizens of Oita take a great interest in the rubber industry, having in fact secured 50 per cent of the 240,000 shares issued by eight Japanese plantation companies, and are looking forward to the erection of a rubber goods factory with the intention of investing heavily.

In Japan itself, the government has been passing new laws and resolutions with a view to improving manufactures. At a recently convened extraordinary meeting the Railway Council adopted the project of the Minister of the Interior for the construction of 589 miles of cross-country railways in Japan to link up the present trunk lines. Altogether 217,000,000 yen (about $108,000,000) have been appropriated and will be expended during the next ten years on the construction of these new lines.

Another important action of the government was the passing of the Military Motor Vehicle Subsidy Law, which provides for the subsidizing of manufacturers and owners of automobiles suitable for military use and with carrying capacity of not less than one ton. Subsidized vehicles may be requisitioned at any time and suitable compensation will be paid the owner. Manufacturers and owners must be Japanese subjects or companies composed solely of Japanese subjects, and their factories and cars must be in the Japanese Empire. It is expected that this action will stimulate both the home production of automobiles and tires, as well as the importation of these articles from America.

All this activity is viewed with mixed feelings by American business men, and where industries in the United States are concerned that have developed during the war, there is much insistence on the need for adequate tariff protection. Thus, American manufacturers of surgical instruments testified before the United States Tariff Commission that the Japanese were serious competitors in their particular line, having displaced German manufacturers in the American market since the war began. In Canada, where there are no tariff duties on these instruments, the Japanese have driven the Americans from the field. This is but one instance where Japan and her cheap labor have been able to compete successfully with an occidental country.

JAPANESE COMMERCIAL MUSEUM AT SINGAPORE.

According to the "Japan Gazette," the Japanese Department of Agriculture and Commerce will shortly establish a commercial and industrial museum at Singapore for the purpose of developing Japan's trade with the Straits Settlements and other places in the South Pacific after the war. M. Kimura, an instructor of the Yamaguchi Higher Commercial School, will be appointed president of the new museum.

RUBBER PLANTING NOTES.

FEDERATED MALAY STATES.

A REVISED duty has been imposed on all cultivated rubber, including latex, exported from the States of Perak, Selangor, Negri Sembilan, and Pahang, effective March 15, 1918.

The new duty is as follows:

RUBBER.—Any cultivated rubber (including latex) 2½ per cent of the value calculated at a rate notified from time to time in the "Gazette" as the rate at which the value of rubber is to be calculated for the purpose of export duty, one gallon of latex being taken as equivalent to twelve tahils of cultivated rubber.

No rubber on which export duty has been paid in any other state of the federated Malay States shall be liable to export duty under this notification unless brought into or conveyed through the state in contravention of the rules, if any, from time to time made in that behalf by the resident.

In addition to the above duty, the following duties are leviable under the "War Taxation Enactment, 1917," on the exportation of cultivated rubber from each of the abovementioned states, viz.: When the price of cultivated rubber does not exceed 2s. 6d. per lb., 2½ per cent ad valorem; when it exceeds 2s. 6d. per lb. 5 per cent ad valorem.

A NEW REMEDY AGAINST THREAD CANKER.

For more than a year, thread canker was fought on the government estate, Kalitelo, Java, by daily painting of the tapping wounds with tar. Although the results were excellent, H. van Lennep, of the government rubber estate, Boewaran, Java, found serious defects in the use of coal tar. Thus, he points out that the thickness of the fluid permits tappers to mask the quality of the tapping cuts they make. Then, tapping is made difficult by the drying tar, while in addition, the penetration of the thinner portion of the tar into the bark tissue causes the outer layer to die, so that more bast must be cut off in order to reach the latex vessels.

A further disadvantage is that once a wound is painted with this material, the black color completely conceals developments, and it is not until the tar is scraped off that possible spreading or new complications are discovered. Lastly, the tar, when dry, forms a hard cake that slowly drops off in scales only after several months, while it shuts out the light, so that despite the fact that the wound heels rapidly, a fairly thick layer of dead tissue is found immediately under the tar, and the color of the living tissue is white instead of green.

Mr. van Lennep claims to have found another remedy in a solution of resin and benzine, which covers the wound with an extremely thin coating that dries as a transparent film and completely isolates it. The transparency of the layer not only

permits control of the progress of the wound, but also admits the light; consequently, instead of a dead layer under the solution, as in the case of tar, living green bast is found.

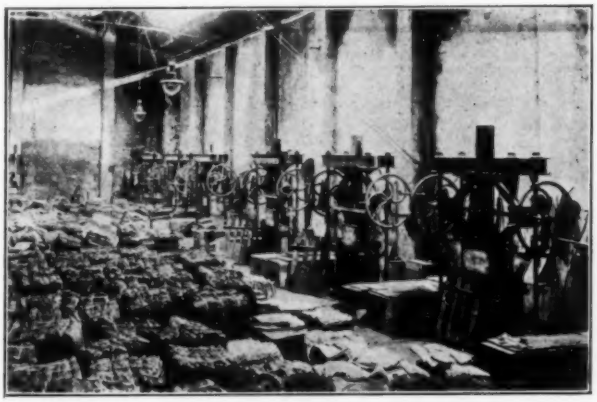
The solution is prepared as follows:

Resin is reduced to powder, and benzine, in the proportion of 1 cubic centimeter to 1¼ grams of resin, is poured onto this powder, and the mixture is left until all the resin is dissolved. If desired, five per cent of carbolinium is added. To avoid evaporation of the solution, it should be kept in a closed vessel.

Two defects attach to this new remedy: first, it is more expensive than tar; secondly, its colorlessness makes it more difficult to discover trees that have not been treated. However, it is suggested that the addition of some cheap dye which would not change the transparency of the solution, would do away with the latter objection.

BALED RUBBER FROM THE UNITED STATES RUBBER CO.'S PLANTATIONS.

Saving valuable cargo space in transporting crude rubber to this country from the Far East has been made possible by the introduction on the rubber plantations of the United States



BALING ROOM IN THE UNITED STATES RUBBER CO.'S WAREHOUSE IN SINGAPORE.

Rubber Co. of methods of baling rubber which increases the amount of rubber in each package from twenty to thirty per cent. This company began baling its rubber on its great plantations in the fall of 1915, and has recently equipped its storehouses in Singapore with improved baling machinery.

The adoption of these new baling methods by other rubber companies has made it possible for the Government to permit the shipment of many tons of rubber which otherwise would have been denied importation because of lack of cargo space.

NOTES FROM THE NETHERLANDS EAST INDIES.

By Our Regular Correspondent.

MUCH has been said and written within the last few years about the prospects of the Batavia rubber market after the war, and while there has always been a party strongly favoring Batavia, it is only very recently that any definite action has been taken to make this market more attractive to buyers and sellers, and to strengthen its position.

On April 10, 1918, an extraordinary general meeting of the Batavia Rubber Trade Association was held, during which a circular by A. R. F. van der Mark on the improvement of the organization of the rubber market at Batavia was discussed and some of the suggestions voted on.

The main points for consideration were:

(a) The appointment of a salaried person who shall devote himself entirely to the interests of the association and act for it.

(b) The establishment of a department which shall warehouse and ship rubber for members, thus reducing expenses as much as possible.

(c) A request addressed to the East Indian Government for active support of the market and the association.

(d) Institution of a good information bureau (quotations, foreign markets, etc.)

(e) Concentration of the markets at Batavia, Soerabaja, Samarang and Medan, and closer contact between interested persons in these centers.

(f) Increase of the number of members and stimulation of interest and support.

The proposal to establish a department to care for warehousing and shipping was put to the vote and accepted by a large majority. From May 20, 1918, the Batavia Rubber Trade Association began to accept rubber for warehousing and shipping.

It is expected that the effort at improving the local rubber markets will meet with complete success, and several important Soerabaia firms have given notice of their approval.

As was pointed out in the circular, the factors in favor of the Batavia and other Netherlands East Indies rubber markets were distance and the impatience of European and American markets of dependence on London. The first point was regarded especially important in view of the fact that America has been the largest buyer of rubber, while both Australia and Japan are growing importers and would prefer to buy at the source, especially if conditions were made as attractive as possible.

DUTCH SHIPS TO BE RELEASED FOR AMERICAN TRADE.

It is understood that forty Dutch ships, totaling approximately 100,000 tons, which have been tied up in Dutch East Indian ports because of fear of German submarine ruthlessness, will soon be released to carry various Eastern products to the Pacific Coast of the United States. In return the United States will license normal imports to the islands of American goods much needed there, subject to such limitations as may be made necessary by the war program.

PROPOSED GENERAL RUBBER EXPERIMENT STATION.

H. J. van Hasselt, director of the rubber section of the Forest Department, recently presented a plan for a general rubber experiment station and explained the need of such an institution at this time in the Islands.

The plan, briefly, is this:

The central station is to be composed of six sections, namely: (1) physiological research; (2) selection; (3) field experiments; (4) phytopathological and entomological research; (5) investigation of the product; (6) technical division.

At the head of this organization is a director, a man of science, who will act only as leader, doing no independent scientific work, and developing close cooperation between the different experiment stations.

Furthermore, there are to be six chiefs of divisions and eight assistants.

The reasons given for the advisability of this plan are that numerous important questions relating to rubber cultivation have not been satisfactorily solved; that diseases are increasing; that insufficient organization of the existing experiment stations has prevented them from giving to the rubber industry what it needs, and that in consequence the rubber industry in Java will in future be in a very difficult position and will even decline.

These remarks have prompted Mr. Hamaker to severe criticism. He points out that, though an ideal experiment station for rubber has been thought of by many and is in itself no evil plan, Mr. van Hasselt has chosen the wrong time to propose it, while his statements regarding the present and future condition of rubber and of the work of the experiment stations can only make planters doubt the value of what has been discovered and cause them to withhold from the experiment stations such support as is already reluctantly and charily given.

Recent Patents Relating to Rubber.

THE UNITED STATES.

ISSUED MAY 28, 1918.[1]

NO. 1,267,657. Maternity corset, with elastic sections. E. Grace, Hoquiam, Washington.

1,267,678. Practice apparatus for boxers, with slidably mounted striking-bag. W. H. and R. B. McArdle, Camden, New Jersey.

ISSUED JUNE 11, 1918.

1,268,924. Tire with metal channel-shaped body and cushion tread-members. H. A. Burch, Kalamazoo, Michigan.

1,268,931. Antiskid device for automobile wheels. B. G. Cope, Orrville, Ohio.

1,268,934. Hose clamp. W. L. Crabill and W. E. Wiley—both of Battle Creek, Michigan.

1,268,954. Platen and platen equipment for typewriters. H. A. Foothorap, assignor to Elliott-Fisher Co.—both of Harrisburg, Pennsylvania.

1,268,957. Spring tire having coiled springs within sockets inside of hollow casing. J. B. Gabrielson and G. E. Swenson—both of Springville, New York.

1,269,122. Atomizer. W. W. Saile and H. E. Ganiard—both of Le Roy, New York.

1,269,124. Blowout patch for pneumatic tires. J. M. Smith, Pittsburgh, Pennsylvania.

1,269,155. Resilient heel-lift having anchoring washer within. J. H. Brown, Chicago, Illinois.

1,269,187. Resilient wheel. J. Johnson, Honolulu, Hawaii.

1,269,361. Teat cup with teat-receiving rubber diaphragm. A. W. Zeratsky and O. Wostal—Both of La Crosse, Wisconsin.

1,269,388. Protective armor-belt for pneumatic tires. J. Clydesdale, Weehawken, New Jersey.

1,269,398. Mud block for tires. W. C. Daniel, Louisa, Virginia.

1,269,445. Life-saving raft having inflatable body. D. Hooper, Nahant, Massachusetts.

1,269,446. Tread attachment for vehicle wheels. F. W. Hottenroth, New York City.

1,269,465. Resilient wheel. W. Layton, Sea Girt, New Jersey.

1,269,500. Tire core having spring metal shell and tread filler secured thereto. F. Faulsen, Minneapolis, Minnesota.

1,269,505. Pneumatic tire. L. R. Poschadel, Milwaukee, Wisconsin.

ISSUED JUNE 18, 1918.

1,269,585. Automobile-tire tool. L. B. Dutcher, Oswego, New York.

1,269,620. Pneumatic surgical tourniquet. W. Levine, Princeton, New Jersey.

1,269,628. Pneumatic tire. P. Malacos, Wheeling, West Virginia.

1,269,652. Combined shoe filler and shank piece of vulcanized rubber compound. W. Shaw, Dedham, Massachusetts, by mesne assignments, to United Shoe Machinery Corp., Paterson, New Jersey.

1,269,693. Inner lining for pneumatic tires. E. H. Faile, Larchmont Manor, New York.

1,269,694. Tire valve. W. C. Faires, Mount Gilead, Ohio.

1,269,746. Inflatable mattress. W. B. Robeson, Port Huron, Michigan.

1,269,805. Vest with detachable sleeves, having sleeve-openings expansible by means of elastic device. M. Felberbaum, Baltimore, Maryland.

1,269,810. Vehicle wheel with cushions interposed between rim and tread and hub and ring. F. J. Hamrock, Homestead, Pennsylvania.

1,269,842. Resilient tire for automobile wheels. W. A. Neal, Lewisburg, West Virginia.

1,269,879. Wheel rim for tires. M. G. Tennent, Sedro Woolley, Washington.

1,269,921. Anti-skidding device for automobiles. M. J. Frambach, Melvin, Iowa.

1,269,958. Leather shoe heel with rubber insert extending to walking surface at point of greatest wear. J. E. Price, Los Angeles, California.

1,270,022. Demountable rim for tires. A. M. Doerfler, Medford, Massachusetts.

1,270,031. Shoulder pad with elastic retaining device. R. Jackson, Jr., Canton, Ohio.

1,270,035. Lettering pen of the fountain type, having slits at its point and corrugations on both faces, for inking both faces. F. W. Kuehn, St. Louis, Missouri.

1,270,053. Reinforcing ring for tire beads and method of manufacture. L. M. Ream, Thompson, Connecticut.

1,270,057. Man's garter with wide leg-band of elastic. H. C. Rood, Bridgeport, Connecticut.

1,270,073. Leak-locating detector for pneumatic tires. L. Thiem, Toledo, Ohio.

1,270,130. Demountable rim for vehicle wheels. C. Edelen, Bardstown, Kentucky.

1,270,191. Tire-tread fastener. L. S. Morse, Oceanpark, California.

1,270,223. Pneumatic inner tube. V. Shavitch, Carmel, California.

1,270,247. Rubber tire and method of manufacture. O. H. Cloyd, Peoria, Illinois.

ISSUED JUNE 25, 1918.

1,270,253. Dust cap for tire valves. A. E. Aker, Eldorado, Kansas.

1,270,292. Typewriter platen and pressure feed means. E. B. Hess, Brooklyn, assignor to Royal Typewriter Co., Inc., New York City—both in New York.

1,270,298. Sanitary inflatable pillow. W. Jones, Daylight, Tennessee.

1,270,308. Teat cup. K. K. McLeod, St. Paul, Minnesota.

1,270,343. Bullet shield with inner layer of rubber. F. Szmyt, Collinsville, Oklahoma.

1,270,345. Tire-vulcanizing tube with rubber lining. J. D. Tew, Akron, Ohio, assignor to The B. F. Goodrich Co., New York City.

1,270,378. Returning hoop with elastic cord. F. Cobarubia, Sacramento, California.

1,270,420. Electric-vehicle wheel rim with concentric motor armature. J. McL. Kingsbury, assignor to Kingsbury Gas-Electric Motor Car Co.—both of Great Falls, Montana.

1,270,435. Demountable tire rim. L. H. Perlman, New York City.

1,270,445. Rubber-cushioned automobile wheel having rigid frame. W. Schoellkopf, Cleveland, Ohio.

1,270,482. Armor for pneumatic tires. C. E. Bates, Chester, Pennsylvania.

1,270,523. Detachable rubber heel. J. A. Kaiser, Detroit, Michigan.

1,270,527. Electric motor wheel with rubber tire. J. McL. Kingsbury, assignor to Kingsbury Gas-Electric Motor Car Co.—both of Great Falls, Montana.

1,270,536. Cleaning device with sponge-rubber pad. C. A. Maher, Wallowa, Oregon.

1,270,548. Demountable tire rim. L. H. Perlman, New York City.

1,270,550. Antiskid device for tires. F. C. Poling, Menlo, assignor to Goode Anti-Skid Chain Manufacturing Co., Des Moines—both in Iowa.

1,270,565. Pharyngeal inhaler to prevent mouth-breathing, with attached gas bag. C. K. Teter, assignor to The Teter Manufacturing Co.—both of Cleveland, Ohio.

1,270,591. Cushion tire and method of manufacture. M. Beck, New York City.

1,270,604. Sectional core for the manufacture of inner tubes. H. Dech, assignor to the Mercer Tire Co.—both of Trenton, New Jersey.

1,270,618. Rubberset riffle for ore concentrators. J. Horn, Los Angeles, California.

1,270,635. Beard softener. K. E. Ljungstrom, Washington, District of Columbia.

1,270,678. Balloon with segmental gas-holders arranged in a circle. M. Zavarkin, East Brimfield, Massachusetts.

1,270,693. Nursing nipple. E. M. Caldwell, Edgewood, assignor to Davol Rubber Co., Providence—both in Rhode Island.

1,270,704. Raincoats for cyclists, covering operator, and body, handle-bars, etc., of cycle. R. V. Cherry, Racine, Wisconsin.

1,270,711. Demountable tire rim. H. R. Dugger, Murphy, Texas.

1,270,730. Folding washstand. S. S. Haydon, Harrodsburg, Kentucky.

ISSUED JULY 2, 1918.

1,270,872. Device and method for forming rubber balls, etc. I. W. Robertson, Akron, Ohio.

1,270,880. Self-retaining splint, with tubular elastic sleeve. B. Scheinkman, New York City.

1,270,927. Hose clamp. J. R. Clancy, Syracuse, New York.

1,270,952. Tire-pressure valve and signal. G. O. Jones, Bouton, Iowa.

1,270,953. Vehicle spring with pneumatic cushions. L. J. Jones, Bridgeport, Connecticut.

1,270,960. Hose clamp. S. J. Linton, Groveland, New York.

1,270,971. Airship having two sheet-metal envelopes filled with captive balloons in massed formation. G. E. Richmond, Austin, Texas.

1,270,999. Tire-inflation nozzle. C. T. Williams, Trenton, New Jersey.

1,271,012. Breathing and face-protecting apparatus for use in drilling rock. A. Blanc, Aspen, Colorado.

1,271,019. Tire protector. S. E. Clark, Gage, Oklahoma.

1,271,177. Horse-shoe having rubber body. F. Kusiak, assignor to Nik Kusiak—both of New York City.

1,271,184. Weighted bulb. M. Y. Lucas, Boise, Idaho.

1,271,204. Perfume-vending machine. H. L. Needham, McMinnville, Oregon.

1,271,222. Tire rim. H. Raflovich, New York City.

1,271,301. Mop and wringer. H. L. Feasel, New York City, assignor to the O-So-Ezy Mop Co., a corporation of Michigan.

1,271,302. Mop and wringer. H. L. Feasel, New York City, assignor to the O-So-Ezy Mop Co., a corporation of Michigan.

1,271,258. Resilient wheel. J. Picketts, San Diego, California.

1,271,366. Vehicle wheel with pneumatic tire. G. R. Riggs, Washington, District of Columbia, assignor of one-half to F. A. Schaefer, Raspeburg, Maryland.

1,271,388. Tire shoe of woven metallic fabric. J. E. Taylor, Cleveland, Ohio.

1,271,430. Ink-containing fountain-pen cap, etc. A. W. Bush, Coronado, California.

1,271,456. Adjustable rectal dilator. T. J. Flack, St. Louis, Missouri.

[1] The patents under this date were omitted from our issue of August 1, 1918, because we were unable to secure a complete copy of "The Official Gazette" of May 28 before going to press.

Chemical Patents will be found on page 723. Machinery Patents on page 725.

1,271,457. Stylographic lettering instrument. E. D. Gaines, Clinton, Iowa.
1,271,464. Fastener for antiskid chains. W. O. Harmon, La Pryor, Texas.
1,271,468. Foot-arch support with sponge-rubber body. C. H. Hill, Lynn, Massachusetts.
1,271,477. Fountain pen with compressible ink sack. U. Kornstein, New York City.

THE UNITED KINGDOM.

ISSUED JUNE 26, 1918.

115,130. Waterproof containers for life-saving apparatus. A. W. L. Schermuly, Stonecroft, Stone Cot Hill, Sutton, Surrey.
115,142. Tire attachments to rims. T. J. Hobson, 17 Chain Walk, Aston, Birmingham.
115,146. Tire valve. H. A. Wood, Princes street, Kingston, Ontario, Canada.
115,148. Two-part clog sole for boots, etc., connected at instep by strip of india rubber. C. A. Christianson, 33 Timber Bush, Leith, Midlothian.
115,164. Demountable rim for tires. W. J. Mellersh-Jackson, 28 Southampton Buildings, London. (Detroit Pressed Steel Co., Detroit, Michigan, U. S. A.)
115,168. Artificial foot with pneumatic cushion. A. Vianello, 1585 San Marco Frezzaria, Venice, Italy.
115,177. Fountain pen with collapsible reservoir. T. Cahalan, 14 Ivy Lane, London.
115,178. Demountable rim for tires. H. Allen, 2202 East 81st street, Cleveland, Ohio, U. S. A.
115,185. Surgical irrigator using rubber bands for attaching to limb. J. Mathias, 37 Ewenny Road, Bridgend, Glamorganshire.
115,260. Pneumatic cushion as buffer on aircraft or tender for boat, with inner inflatable tube. S. E. Saunders, Limited, S. E. Porter, and F. Goatley, Columbine Works, Medina Road, East Cowes, Isle of Wight.
115,289. Soft rubber disks for cleaning and polishing natural teeth, cleaning and polishing material being incorporated in same during manufacture. G. O. Burley, 55 Nairn Place, Newark, Essex.
115,306. Reinforced base for solid rubber tire. A. W. Terkington, 76 York street, Buckingham Gate, London.

ISSUED JULY 3, 1918.

115,456. Button-clasp for hose-supporters, with elastic sleeve. H. J. Stuart, Derby, Connecticut, U. S. A.

ISSUED JULY 10, 1918.

115,507. Stocking-suspender grips with headed elastic sleeve. F. A. Russ, Brookside Drive, Greenwich, and H. J. Stuart, 69 Seymour avenue, Derby—both in Connecticut, U. S. A.
115,513. Two-part pattern for vulcanite denture. Western Dental Manufacturing Co., 57 Queen's Road, Bristol, and H. Osborn, 31A Denmark Road, West Ealing, London.
115,568. Rubber substitute sole with inserts of leather. A. Dales, India Rubber Mills, Blake street, Stretford Road, Manchester.
115,575. Nitrous oxide inhalers. C. S. Lafferty, 102 High Road, Wembley, Middlesex.
115,583. Gas holders for motor vehicles. H. O. and A. E. Short, 1 Ranulf Road, West Hampstead, London.
115,628. Sole for boots and shoes, having layers of rubber, rubberized felt, rubber substitute, etc. Société Française du Cuir Armé, 57 rue Alexandre Dumas, Paris.
115,658. Container for tablets of solid ink, attached to fountain pens. J. Williams, County School, Abergele, and L. T. Jones, Greenwich House, Old Colwyn—both in Wales.

THE DOMINION OF CANADA.

ISSUED APRIL 30, 1918.

183,323. Detachable heel-cap of rubber. G. Evans, Toronto, Ontario.
183,338. Rubber heel with metal spring embedded therein. E. Kempshall, Atlantic City, New Jersey, U. S. A.
183,389. Resilient shoe-heel lift. G. H. Lewis, Elyria, Ohio, U. S. A.
183,432. Paper-holder for dental chairs, with rubber band as securing means. E. G. Dayeh, New York City, U. S. A.
183,460. Artificial hand having hollow fingers composed of rubber and fabric and stiffened with wires. P. M. McKay, Rockville, Nelson, New Zealand.
183,466. Resilient wheel. J. D. Pursel, New York City, U. S. A.
183,494. Rubber overshoe combining storm and sandal features. The Canadian Consolidated Rubber Co., Limited, Montreal, Quebec, Canada, assignee of C. S. Goodyear, Naugatuck, Connecticut, U. S. A.
183,606. Tire indicator. S. W. Read, Corvallis, Oregon.
183,638. Tire-shoe mandrel for vulcanizing rubber by electricity. The Canadian Consolidated Rubber Co., Limited, Montreal, Quebec, Canada, assignee of H. Z. Cobb, Winchester, Massachusetts.
183,665. Tire for motor vehicles. J. H. Hamlin and J. C. Burford, coinventors—both of Winston-Salem, North Carolina, U. S. A.
183,769. Vehicle wheel with demountable rim for tires. O. A. Parker, Cleveland, Ohio, U. S. A.
183,783. Fabric band composed of series of laminated fibrous elements with vulcanizable adhesive filling spaces between series. L. A. Subers, Cleveland, Ohio, U. S. A.
183,863. Covering for inner tubes. J. J. Hartnett and G. E. Flath, coinventors—both of Guelph, Ontario, Canada.
183,880. Apparatus for relieving piles, with base of fabric and rubber sheet, and having rubber nipple. H. L. Beard, Quincy, Illinois, U. S. A.
183,924. Rubber tire fastener. S. Johnstone, Corunna, Ontario, Canada.
183,953. Cushion heel having a plate embedded therein with detents for guiding nails used for attaching. F. A. Nolan, St. Paul, Minnesota, U. S. A.
183,959. Truss with elastic pressure band. J. H. Pickering, Aylmer, Ontario, Canada.
184,043. Shaving brush with butt ends set in rubber. S. D. Purdy, assignor of one-half interest to T. S. Sims & Co., Limited—both of Fairville, New Brunswick, Canada.

THE FRENCH REPUBLIC.

PATENTS ISSUED. WITH DATES OF APPLICATION.)

486,503. (August 14, 1917.) Resilient wheel for all kinds of vehicles. M. Cadet.
486,530. (August 23, 1917.) Improvements in vehicle wheels. J. E. Rogers and W. W. Patterson.
486,532. (August 23, 1917.) Improvements in rubber tires. The Dunlop Rubber Co.
486,534. (August 24, 1917.) Tire valve. A. Schrader's Sons, Inc.
486,536. (August 24, 1917.) Improvements in vehicle wheels. The Dunlop Rubber Co.
486,537. (August 24, 1917.) Elastic rim for all kinds of vehicles. G. L. Aubert.
486,622. (August 29, 1917.) Improvements in the treatment of vulcanizable plastic matters. Morgan & Wright.
486,664. (September 3, 1917.) Improvements applied to wheels before being supplied with pneumatic tires, and in the tires to go with these wheels. W. J. Vincent.
486,707. (September 7, 1917.) Improvements in tractor wheels. Samson Sieve-Grip Tractor Co.
486,744. (September 6, 1917.) Resilient wheel. L. N. Munoz.
486,779. (March 15, 1917.) Improvements in belting. F. G. Baugatz.
486,820. (September 13, 1917.) Tire. J. Martinez.

NEW ZEALAND.

ISSUED MARCH 21, 1918.[2]

39,526. Milking-machine teat cup. A. Worthington, Mareretu, Aukland, New Zealand.
39,650. Vehicle tire having metal ring embedded in rubber. George G. A. Mortier, 5 Hall Road, Fulwood, Preston, Lancaster, England.

ISSUED JUNE 13, 1918.

39,934. Antiskid device for twin tires. Irvine Brook, 106 Commercial street, Brighouse, Yorks, England.
39,935. Balata or gutta percha insulated electric cable. F. Jacob, Ellesdene, Westcombe Park, S. E. 3, Kent, England.

[2] The patents under this date were omitted from an earlier issue because of delay in receiving the "New Zealand Patent Office Journal."

TRADE MARKS.

THE UNITED STATES.

NO. 101,453. The word OSPREY—golf balls. North British Rubber Co., Limited, Edinburgh, Scotland.
102,688. The word SHIELD—rubber toys, including dolls, animal figures, and rattles. The Mechanical Rubber Co., New York City.
102,689. Representation of a double-outlined shield with the initial M superimposed thereon—rubber toys, including dolls, animal figures, and rattles. The Mechanical Rubber Co., New York City.
103,306. The words FOX-IT—tire repair outfit. Superior Fabric Patch Co., Midlothian, Texas.
103,455. The word THERMOID inside a conventionalized head-rule—brake linings. Thermoid Rubber Co., Hamilton Township, Trenton, New Jersey.
104,007. A conventional representation of lightning across a section of tire, the section not forming a part of the trade-mark—automobile tires of rubber and fabric. J. M. Gilbert, Andover, Massachusetts, assignor to Carlisle Cord Tire Co., Inc., New York City.
105,023. The words O'BANNON INTERNATIONAL conventionalized and arranged one over the other, the tops of the latter T in the second word being extended to form an underline for the first word—leather or composition carriage cloth.
107,454. Representation of the letter C conventionalized, crossed by an arrow—sheet rubber. African Association, Limited, Liverpool, England.
107,692. The words SEE-SAFE with a horizontal line over the word, connecting the first and last letters—automobile wind-shield wiper. G. I. Stadeker, Chicago, Illinois.
108,427. The initials H L B in white on a diagonal strip of black within a double-outlined circle—rubber belts and belting, etc. Hide Leather & Belting Co., Indianapolis, Indiana.
108,566. The words TRI-CO. UNIVERSAL—windshield cleaners. Tri-Continental Corp., Buffalo, New York.
108,801. A conventionalized sunburst with the monogram M. A. M. Co. superimposed on the sun and the word JUNIOR over it—rubber-tire vulcanizing outfits consisting of portable rubber-tire vulcanizers, rubber patches, rubber cement and repair materials, combustible heating units for vulcanizers, etc. The Marvel Accessories Manufacturing Co., Cleveland, Ohio.
108,873. Representation of a double circle bearing the word LIBERTY on one side and pierced by the bust of the figure of Liberty bearing her torch—elastic bandages, game balls, striking bags, etc. A. J. Reach Co., Philadelphia, Pennsylvania.
109,021. The words MARY ELIZABETH—fabric cases, some rubber-lined, for toilet articles. The Clark Manufacturing Co., Boston, Massachusetts.
109,107. Representation of a dog stuck to one spot by glue coming from a tube near him, and the word OK-O-CO above—a rubber patch for use in repairing inner tubes for bicycle tires. Oklahoma Oil & Auto Supply Co., Ardmore, Oklahoma.

109,156. Representation of an ape pulling a patch from an inner tube—rubber patches for auto and motorcycle inner tubes, rubber boots, hose, rubber belting, and hot-water bottles. A. C. McCandless, Wichita, Kansas.

109,174. A circular band of red around a white center, the word GOODYEAR being superimposed on the red band—elastic vehicle tires. The Goodyear Tire & Rubber Co., Akron, Ohio.

109,632. Conventionalized representation within a double circle of a phœnix rising from flames—reclaimed rubber in bulk in whatever form. The Phœnix Rubber Co., Akron, Ohio.

109,770. The word Coo-Coo above which are two conventionalized C's, each containing two O's—rubber tires. McDevitt and Greenspan, Chicago, Illinois.

109,797. Representation of an evergreen tree and the quoted word EVERGREEN, superimposed on a shield—vehicle tires of rubber and fabric. The Falls Rubber Co., Cuyahoga Falls, Ohio.

109,807. The word MAGIC—mechanical vulcanizer for use on tires and tubes. G. S. Kinney, New York City.

109,889. The word TRIPLEXED—fabric-covered rubber hose with metal lining. Metal Hose & Tubing Co., Brooklyn, New York.

110,001. The word and figures BIG 12—chewing gum. Adams Brothers, New York City.

110,132. The word BUCKSKIN in script letters with the tail of the N making an underline for the word—impervious sheeting of rubber and rubberized fabric. Reid Brothers, Seattle, Washington, and San Francisco, California.

110,184. The word SUPERFIX with double curved lines above and below—rubber cement. The Superfix Rubber Co., Elyria, Ohio.

THE UNITED KINGDOM.

379,546. The word ARCO—goods manufactured from india rubber and gutta percha not included in other classes. The Asbestos & Rubber Co., Limited, 24 King Edward street, Kingston-upon-Hull.

379,979. The word BELDALITE—insulating compositions for preventing radiation of heat. Beldam Tyre Co., Limited, Windmill Road, Brentford, Middlesex.

379,980. The word BELDALITE—all goods included in Class 40. Beldam Tyre Co., Limited, Windmill Road, Brentford, Middlesex.

379,981. The word BELDALITE—electrical insulating preparations. Beldam Tyre Co., Limited, Windmill Road, Brentford, Middlesex.

380,529. Portrait of J. HODGINS with facsimile of his autograph beneath and additional characters in Chinese, the phonetic rendering of which is, "Siang teng toe nee chue gin hoe," meaning "Quality best knife rubber qualities harmonious"—rubber knives. J. Hodgins, 5 Montpelier Terrace, Wellington Road, Cork, Ireland.

382,072. The word BALCO—goods manufactured from india rubber and gutta percha included in Class 40, not including machine belting or straps, etc. H. Steadman & Co., Limited, 24 Castle Green, Bristol.

382,407. Representation of an acorn and oak leaf on stem over the word ACORN—suspenders, braces, and garters. Flint, Pettit & Flint, Forest Road Mills, Forest Road, Leicester.

382,410. Representation of two roses with leaves beneath the words THE POSY—suspenders, braces, and garters. Flint, Pettit & Flint, Forest Road Mills, Forest Road, Leicester.

382,545. The word OKPAC—steam and hydraulic packing. James Dawson & Son, Limited, Boultham Leather Works, Boultham, Lincoln.

382,809. The word HYDROMAC—ladies' and gentlemen's waterproof coats. H. B. Rogers, 6 College Gardens, Tufnell Park, London, N. 7.

383,941. Representation of a turtle beneath the words THE DRI-SHOD BALATA CO., LIMITED, with additional words as follows: at the lefthand end, LONG LIFE; at the righthand, WATER PROOF; beneath, NON-SLIPPING—balata soles and heels for boots and shoes. The Dri-Shod Balata Co., Limited, 3 Copthall Buildings, Throgmorton street, London, E. C. 2, and 37 Theobald's Road, London, W. C. 1.

383,142. The word TREDURA—artificial leather. N. Thierry, Limited, 133 Borough High street, London, S. E. 1, and 48 Gresham street, London, E. C. 2.

383,179. The word NAUTILOID—life-saving garments for use on water. Boddy Life Saving Appliances, Limited, 4 Broad street Place, London, E. C. 2.

383,316. The word EDMOROYD—waterproofing compounds for textiles. S. T. Holroyd, Jr., and H. W. Edmondson, copartners, Sheepscar Dye Works, North street, Leeds, Yorkshire.

383,328. The words VI-ROK—artificial leather. Lilley & Skinner, Limited, 192-204 Pentonville Road, King's Cross, London, N. 1.

383,855. The word STUX. India rubber solution. Stead Hunt, Limited, Fielding street, Middleton, near Manchester.

THE DOMINION OF CANADA.

23,463. The word TEXACO above a star bearing the letter T—rubber stock, waterproofing, impregnating compound, etc. The Texas Co., Houston, Texas, U. S. A.

23,479. Representation of a circle formed by a rope enclosing the letter M and the word MINER—rubber footwear and clothing, heels and soles, coverings for vehicles and animals, rubberized cloth, rubber belting, hose, automobile and bicycle tires, insulating material, and rubber cement. The Miner Rubber Co., Limited, Montreal, Quebec, Canada.

23,480. Representation of a circle formed by a rope enclosing the words MINER MEANS MERIT and the letter M—rubber footwear and clothing, heels and soles, coverings for vehicles and animals, rubberized cloth, rubber belting, hose, automobile and bicycle tires, insulating material, and rubber cement. The Miner Rubber Co., Limited, Montreal, Quebec, Canada.

23,487. The word PREMIER—rubber tires. The F. E. Partridge Rubber Co., Limited, Guelph, Ontario, Canada.

NEW ZEALAND.

13,914. The words GOOD YEAR with the representation of a winged sandaled foot between them—carpets, floorcloth, and oilcloth. The Goodyear Tyre and Rubber Co. of New Zealand, Limited, Mercer street, Wellington.

13,922. The representation of a winged sandaled foot—unmedicated surgical or curative instruments, apparatus, and contrivances for both men and animals. The Goodyear Tyre and Rubber Co. of New Zealand, Limited, Mercer street, Wellington.

14,091. The words VELVET GRIP in script characters—metal clips and parts of suspenders for socks and stockings included in class 13. George Frost Co., 551 Tremont street, Boston, Massachusetts, U. S. A.

14,275. The representation of a rooster with a spray of leaves in one claw, standing with the other on a closed hand, of which the index finger is pointing the same way the rooster is facing, this representation being enclosed in a horseshoe-shaped band bearing the words INDIA RUBBER CHAS. MACINTOSH & CO. LD. MANUFACTURERS, while beneath all is a simulated ribbon bearing the words TRADE MARK, and below this, in turn, the word and figures—ESTABLISHED 1824—electrical cables included in class 8. Chas. Macintosh & Co., Limited, 2 Cambridge street, Manchester, England.

14,276. The representation of a rooster with a spray of leaves in one claw, standing with the other on a closed hand of which the index finger is pointing the same way the rooster is facing, this representation being enclosed in a horseshoe-shaped band bearing the words INDIA RUBBER, CHAS. MACINTOSH & CO., LD. MANUFACTURERS, while beneath all is a simulated ribbon bearing the words TRADE MARK, and below this, in turn, the word and figures ESTABLISHED 1824—covering cloths included in class 50, packing and hose of all kinds, india rubber compounds for waterproofing textiles, india rubber cements, and goods manufactured from india rubber or vulcanite included in class 50. Chas. Macintosh & Co., Limited, 2 Cambridge street, Manchester, England.

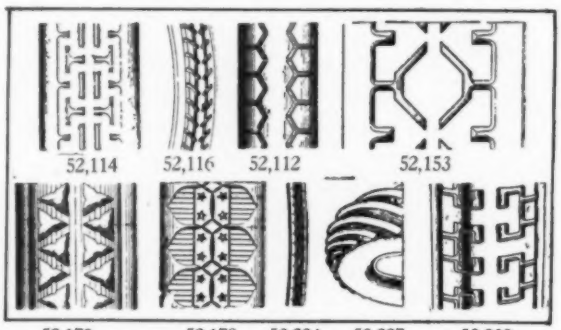
DESIGNS.

THE UNITED STATES.

NO. 52,114. Vehicle tire. Term 14 years. Patented June 18, 1918. C. J. Hodges, assignor to The Long-Wear Rubber Co.—both of Elyria, Ohio.

52,116. Vehicle tire. Term 3½ years. Patented June 18, 1918. B. H. Pratt, Milwaukee, Wisconsin.

52,122. Tire casing. Term 3½ years. Patented June 18, 1918. S. R. Vasbinder, Fulton, Illinois.



52,129. Toy balloon. Term 14 years. Patented July 2, 1918. F. J. Creque, Cuyahoga Falls, Ohio.

52,133. Man's garter. Term 7 years. Patented July 2, 1918. M. B. Hammond, Bridgeport, Connecticut.

52,134. Man's garter. Term 7 years. Patented July 2, 1918. M. B. Hammond, Bridgeport, Connecticut.

52,135. Man's garter. Term 7 years. Patented July 2, 1918. M. B. Hammond, Bridgeport, Connecticut.

52,137. Rubber heel. Term 7 years. Patented July 2, 1918. G. A. Huben, Chicago, Illinois.

52,153. Tire casing. Term 14 years. Patented July 2, 1918. O. L. Weaver, assignor to The Star Rubber Co.—both of Akron, Ohio.

52,170. Tire casing. Term 7 years. Patented July 9, 1918. W. C. Owen, Cleveland, Ohio.

52,178. Tire casing. Term 7 years. Patented July 16, 1918. H. A. Phillips and J. G. Stamm—both of Cleveland, Ohio.

52,199. Hollow rubber figure toy (Dutch girl). Term 14 years. Patented July 16, 1918. F. F. Ziegler, assignor to Davol Rubber Co.—both of Providence, Rhode Island.

52,200. Hollow rubber figure toy (Dutch boy). Term 14 years. Patented July 16, 1918. F. F. Ziegler, assignor to Davol Rubber Co.—both of Providence, Rhode Island.

52,217. Sole for shoe. Term 7 years. Patented July 23, 1918. C. R. Haynes, assignor to The Goodyear's Metallic Rubber Shoe Co.—both of Naugatuck, Connecticut.

52,224. Vehicle tire. Term 7 years. Patented July 23, 1918. A. J. Musselman, Chicago, Illinois, assignor to Indiana Rubber & Insulated Wire Co., Jonesboro, Indiana.

52,227. Tire. Term 3½ years. Patented July 23, 1918. J. W. Richardson, Detroit, Mich.

52,232. Vehicle tire. Term 3½ years. A. E. Wing, Cleveland, Ohio.

Review of the Crude Rubber Market

Copyright, 1918.

NEW YORK.

IT was announced at the meeting at the Waldorf on July 31, that the War Trade Board had decided on a two-months allocation period, namely, August and September, when crude rubber imports will be allowed at the rate of 100,000 tons per annum, the present maximum government prices to remain in effect. From the 16,666 tons thus provided the requirements of the United States and Allied Governments will come first, and the remaining amount will be allocated to manufacturers at the rate of three-eighths of one-sixth of their consumption during 1917. Manufacturers who were not operating at full capacity in 1917 are to receive allocations on the basis of their mixing-mill or churn capacity according to a formula prescribed by the War Trade Board. It was ruled that 50 per cent of imports should come from the Far East and 50 per cent from South and Central America.

As a means of conserving for essential war and business purposes rubber now in the country, the number of tire casings and tubes produced and the amount of rubber used during August and September was restricted to 50 per cent of the production and consumption during the corresponding months a year ago.

The Government's conservation plans for the second period of restricted imports being known, the resumption of business was expected. Manufacturers, however, were slow in placing allocation certificates for plantation shipments, thus creating a depressed condition in Far Eastern markets. During the past month, quotations on August and September shipment of allocated plantation rubber ranged from 32 to 36 cents, and very little free rubber was offered. Paras received considerable interest, particularly during the latter part of August, at 60 to 61 cents for August and September shipment. The consuming demand was limited to small quantities necessary for immediate requirements and clearly indicated the unsettled condition of the manufacturing trade.

The tentative curtailment of tire production and the uncertainty regarding future restrictions of manufactured rubber goods are the factors responsible for the quiet conditions prevailing in the crude rubber market.

STATISTICS.—The London and Liverpool imports for June were 4,344,200 pounds, value £514,232, compared with 2,656,600 pounds, value £325,657, for May. Reexports for June were 2,187,200 pounds, value £261,254, compared with 7,825,900 pounds, value £973,877, for May.

NEW YORK SPOT QUOTATIONS.

Following are the New York spot quotations one year ago, one month ago, and August 26, the last two being United States Government option prices, c. i. f. New York.

		Free Rubber.	
PLANTATION HEVEA—	September 1, 1917.	August 1, 1918.	August 26 1918.
First latex crêpe..... *Hevea first crêpe.....	66 @	63 @	63 @
Amber crêpe No. 1.....	63 @	60 @	60 @
Amber crêpe No. 2.....	62 @	60 @	60 @
Amber crêpe No. 3.....	61 @	58 @	58 @
Amber crêpe No. 4.....	60 @	57 @	57 @
Brown crêpe, thick clean.....	59 @	60 @	60 @
Brown crêpe, thin clean.....	58 @	60 @	60 @
Brown crêpe, thin specky.....	56 @	50 @	50 @
Brown crêpe, rolled.....	46 @	44 @	44 @
Smoked sheet, ribbed standard quality ..... *Hevea ribbed smoked sheets...	65 @	62 @	62 @
Smoked sheet, plain standard quality ..... *Hevea plain or smooth smoked sheets	64 @	61 @	61 @
Unsmoked sheet, standard quality *Hevea unsmoked sheets.....	63 @	60 @	60 @
Colombo scrap, No. 1.....	48 @	46 @	46 @
Colombo scrap, No. 2.....	46 @	44 @	44 @

		Free Rubber.	
	September 1, 1917.	August 1, 1918.	August 26, 1918.
BRAZILIAN PARAS—			
Upriver fine	68 @	68 @	68 @
Upriver medium	62 @	63 @	63 @
Upriver coarse	48 @	40 @	40 @
Upriver weak fine.....	59 @	56 @	56 @
Upper caucho ball.....	40 @	40 @	40 @
Islands fine	61 @	59 @	59 @
Islands medium	58 @	52 @	52 @
Islands coarse	29½ @	27 @	27 @
Cametá	32 @	28 @	28 @
Lower caucho ball.....	37 @	36 @	36 @
Peruvian fine	65 @	67 @	67 @
Tapajos fine	66 @	60 @	60 @
AFRICANS—			
Niger flake, prime.....	30 @	28 @	28 @
Benguela, extra No. 1, 28%.....	39 @	33 @	33 @
Benguela, No. 2, 32½%.....	38 @	29 @	29 @
Congo prime, black upper.....	55 @	48 @	48 @
Congo prime, red upper.....	53 @	48 @	48 @
Rio Nunez ball.....	65 @	55 @	55 @
Rio Nunez sheets and strings.....	65 @	@	@
Conakry niggers	65 @	55 @	55 @
Massai sheets and strings.....	65 @	55 @	55 @
CENTRALS—			
Corinto scrap	42 @	39 @	39 @
Esmeralda sausage	42 @	39 @	39 @
Central scrap	41 @	39 @	39 @
Central scrap and strip.....	40 @	@	@
Central wet sheet.....	30 @	@	@
Guayule, 20% guarantee.....	32 @	35 @	35 @
Guayule, dry.....	45 @	48 @	48 @
MANICOBAS—			
Ceara negro heads.....	48 @	@	37 @
Ceara scrap	@	37 @	37 @
Manicoba (basis 30% loss washing and drying)	45 @	36½ @	36½ @
Manicoba extra	42 @	@	@
Manicoba regular	40 @	@	@
Mangabeira thin sheet.....	39 @	35 @	35 @
Mangabeira thick sheet.....	35 @	36 @	@
EAST INDIAN—			
Assam crêpe	59 @	58 @ 60	58 @ 60
Assam onions	58 @	54 @	54 @
Penang block scrap.....	44 @	37 @	37 @
BALATA—			
Block, Ciudad Bolivar.....	68 @	71 @	71 @
Colombia	@	61 @	61 @
Panama	@	59 @	59 @
Surinam sheet	78 @	95 @	95 @
amber	@	97 @	97 @
PONTIANAK—			
Banjermassin	13 @	15 @	15 @
Palembang	@	16 @	16 @
Pressed block	20 @	25 @	25 @
Sarawak	@	14 @	14 @
GUTTA PERCHA—			
Gutta Siak	21 @	28 @	28 @
Red Macassar	2.80 @	3.00 @	3.00 @

*Rubber Association of America nomenclature.

RECLAIMED RUBBER.

The dormant condition prevailing in the crude rubber market during the past month was strongly reflected in the market for reclaimed rubber. Business is apparently marking time and waiting the activity that is expected to follow the restriction of crude rubber imports. Rubber manufacturers have evinced but little interest in reclaims during the month, and the curtailment of tire production together with the low price of crude, are reasons largely responsible for the present dullness in reclaimed rubber. Prices have not changed since last month's report.

NEW YORK QUOTATIONS.

AUGUST 26, 1918.

Subject to change without notice.

Standard reclaims:				
Floating	lb.	.35	@	.40
Friction	lb.	.40	@	.45
Mechanical	lb.	.12	@	.13
Red	lb.	.20	@	.25
Shoe	lb.	.15	@	.15½
Tire, auto	lb.	.18	@	.18½
truck	lb.	.13	@	.13½
White	lb.	.24	@	.25

COMPARATIVE HIGH AND LOW SPOT RUBBER PRICES.

	August.		
Plantation:	1918.	1917.	1916.
First latex crêpe	$0.63@0.63	...@...	...@...
Smoked sheet ribbed	.62@ .62	...@...	...@...
Paras:			
Upriver, fine	.68@ .68	$0.68@0.71	$0.65@0.68
Upriver, coarse	.40@ .40	.48@ .50	.41@ .42
Islands, fine	.59@ .59	.66@ .69	.58@ .59
Islands, coarse	.27@ .27	.28@ .30	.26@ .28
Cametá	.28@ .28	.30@ .33	.33@ .34

THE MARKET FOR COMMERCIAL PAPER.

In regard to the financial situation, Albert B. Beers, broker in crude rubber and commercial paper, No. 68 William street, New York, advises as follows:

The demand for commercial paper during August has been rather light, as for several months past, and the volume of rubber paper has also been small, the best names being quoted at 6 to 6½ per cent, and those not so well known 6¾ to 7 per cent.

WEEKLY RUBBER REPORT.

GUTHRIE & CO., LIMITED, Singapore, report [June 27, 1918]:

The weekly rubber auction opened yesterday to a very weak market, and prices show a further decline. The top price of the sale for ribbed smoked sheet was $73 per picul, which is $7 below last week's best, while for fine pale crêpe, which has been in very plentiful supply of late, the highest paid was $70, a decline of $8. Lower grades shared in the general weakness, and prices were about $5 down. Of 1,068 tons cataloged, 326 tons were sold.

From July 1 all sales of rubber under the rules of the Chamber of Commerce Rubber Association will be in cents per pound instead of in dollars per picul as hitherto.

The following was the course of values:

	In Singapore per Picul.[1]	Sterling Equivalent per Pound in London.	Equivalent per Pound in Cents.
Sheet, fine ribbed smoked	$69@$73	1/ 7 @1/7¼	29.33@31.03
Sheet, good ribbed smoked	62@ 68	1/ 5½@1/6¾	26.35@28.90
Sheet, plain smoked	@	@	@
Sheet, ribbed unsmoked	@	@	@
Sheet, plain unsmoked	@	@	@
Crêpe, fine pale	66@ 70	1/ 6¾@1/7¼	28.05@29.75
Crêpe, good pale	54@ 65	1/ 2¾@1/6¼	22.95@27.63
Crêpe, fine brown	46@ 55	1/ 2¼@1/4	19.55@23.38
Crêpe, good brown	35@ 45	/11⅞@1/2	14.88@19.13
Crepe, dark	22@ 37	/ 9¼@1/0¼	9.35@15.73
Crêpe, bark	14@ 25	/ 7⅜@ /9¾	5.95@10.62
Scrap, virgin, and pressed	22@	/ 9⅛@	9.35@
Scrap, loose	17@ 19	/ 8⅛@ /8½	7.23@ 8.08

[1] Picul = 133⅓ pounds.
Quoted in S. S. dollars = 2/4 [56.7 cents].

IMPORTS OF CRUDE RUBBER AT CEYLON.

APRIL 8-APRIL 22, 1918.

From—	Pounds.
Malay Peninsula:	
Port Swettenham	64,805
Singapore	14,560
Penang	77,420
Total	156,785
From—	
India:	
Tuticorin	141,579
Total imports	298,364

EXPORTS OF INDIA RUBBER FROM MANAOS DURING MAY, 1918.

	NEW YORK.				
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Totals.
General Rubber Co. of Brazil ...kilos	.....	.....	10,000	115,000	125,000
Stowell & Co.	27,030	.....	.....	172,970	200,000
Adelbert H. Alden, Limited.	24,836	1,648	7,374	10,057	43,915
	51,866	1,648	17,374	298,027	368,915
In transit, Iquitos	28,101	332,691	22,201	139,236	522,229
Totals	79,967	334,339	39,575	437,263	891,144

Compiled by Stowell & Co., Manaos.

CRUDE RUBBER ARRIVALS AT THE PORT OF NEW YORK.

In compliance with the Government's request, dates and names of vessels have been deleted in the following statistics:

[*The Figures Indicate Weight in Pounds.*]

PARAS.

	Fine.	Medium.	Coarse.	Caucho.	Cameta.	Totals.
July —. By the —— from Para an Manaos.						
General Rubber Co.	201,600	.....	.....	134,400	44,800	=380,800
Hagemeyer & Brunn	.....	.....	107,800	44,800	30,000	=182,600
August —. By the —— from Para and Manaos.						
General Rubber Co.	17,920	.....	53,700	336,000	.....	=407,620
H. A. Astlett & Co.	36,000	9,500	.....	.....	.....	= 45,500
Aldens' Successors, Limited	54,754	3,633	16,256	22,172	.....	= 96,815

ARRIVALS AT THE PORT OF NEW YORK.

PLANTATIONS.

TO NEW YORK.

	Pounds.
AUGUST —. By the —— from Singapore:	
Hagemeyer Trading Co.	27,333
AUGUST —. By the —— from Batavia:	
General Rubber Co.	729,300
OVERLAND FROM PACIFIC COAST.	
JULY —. Ex —— from Singapore:	
Hagemeyer Trading Co.	44,800
(July — to August —.)	
Ex ——:	
Rubber Trading Co.	224,600
Ex ——:	
Rubber Trading Co.	35,800
Ex ——:	
Rubber Trading Co.	271,000
Ex ——:	
Rubber Trading Co.	58,240
Ex ——:	
Rubber Trading Co.	67,200
Ex ——:	
Rubber Trading Co.	100,800
Ex ——:	
Rubber Trading Co.	33,600
Ex ——:	
Rubber Trading Co.	537,600
Ex ——:	
Rubber Trading Co.	112,000
Ex ——:	
Rubber Trading Co.	56,000
Ex ——:	
Rubber Trading Co.	56,000
Ex ——:	
Rubber Trading Co.	44,800
Ex ——:	
Rubber Trading Co.	114,240
Ex ——:	
Rubber Trading Co.	16,720
Ex ——:	
Rubber Trading Co.	44,800

AFRICANS.

JULY —. By the ——:	
Fred. Stern & Co.	15,560

GUAYULE.

JULY —. By the —— from Eagle Pass:	
Continental-Mexican Rubber Co.	56,850
AUGUST —. By the —— from Eagle Pass:	
Continental-Mexican Rubber Co.	51,300

CRUDE RUBBER ARRIVALS AT PACIFIC COAST, AS REPORTED.

PLANTATIONS.

	Pounds.
JUNE —. By the ——:	
Fred. Stern & Co.	22,500
JUNE —. By the ——:	
Fred. Stern & Co.	56,080
JULY —. By the ——:	
Fred. Stern & Co.	19,269
JULY —. By the ——:	
Fred. Stern & Co.	56,080
JULY —. By the ——:	
Fred. Stern & Co.	101,920
JULY —. By the —— from Singapore:	
Meyer & Brown	91,900
Fred. Stern & Co.	56,080
JULY —. By the ——:	
Ferd. Stern & Co.	11,200
JULY —. By the ——:	
Fred. Stern & Co.	56,000
AUGUST —. By the —— from Singapore:	
Meyer & Brown	44,800
AUGUST —. By the —— from Colombo:	
General Rubber Co.	306,800
Meyer & Brown	112,000
AUGUST —. By the —— from Batavia:	
General Rubber Co.	400,300
Meyer & Brown	165,800
Fred. Stern & Co.	217,360
AUGUST —. By the ——:	
Fred. Stern & Co.	[1] 22,400
AUGUST —. By the ——:	
Fred. Stern & Co.	149,980
AUGUST —. By the —— from Medan:	
Meyer & Brown	24,600

CRUDE RUBBER ARRIVALS AT PACIFIC COAST AS STATED BY SHIP'S MANIFESTS.[1]

SEATTLE AND TACOMA.

PLANTATIONS.

[*Figured 135 pounds net to the case.*]

TO AKRON, OHIO.

	Pounds.	
JULY —. By the —— from Singapore:		
The B. F. Goodrich Co.	1,006,290	
Goodyear Tire & Rubber Co.	123,820	3,130,110
JULY —. By the —— from Muroran:		
Firestone Tire & Rubber Co.	221,805	
The B. F. Goodrich Co.	409,860	631,665
AUGUST —. By the —— from Singapore:		
Firestone Tire & Rubber Co.		210,060

[1] Footnote.—The figures under this head and under Crude Rubber Arrivals at Pacific Coast as Reported, have been obtained from different sources; repetitions may, therefore, occur.

TO BOSTON, MASS. POUNDS.

AUGUST —. By the —— from Yokohama:
Various 4,320

TO NEW YORK.

JULY —. By the —— from Singapore:
Rubber Trading Co..... 6,615
Robinson & Co..... 34,560
William H. Stiles..... 36,720
Van Siclen & Co..... 33,885
Robert Badenhop & Co..... 86,400
Fred. Stern & Co..... 47,655
United States Rubber Co..... 561,060
Whittal & Co..... 29,700
Various 639,360 1,475,955

JULY —. By the —— from Singapore:
Charles T. Wilson Co., Inc... 131,760
Robert Badenhop & Co..... 64,800
Robinson & Co..... 1,485
Aldens' Successors, Limited... 7,695 205,740

JULY —. By the —— from Muroran:
L. Littlejohn & Co..... 20,790
Rockhill & Vietor..... 67,500
Smith & Schipper..... 108,000
J. T. Johnstone & Co..... 322,785
Fred. Stern & Co..... 73,440
Rubber Trading Co..... 5,265
F. R. Henderson & Co..... 135,000
Robinson & Co..... 30,105
Aldens' Successors, Limited... 10,530 773,415

JULY —. By the —— from Yokohama:
Robinson & Co..... 4,725

JULY —. By the —— from Singapore:
Rubber Trading Co..... 36,990
L. Littlejohn & Co..... 128,520
William H. Stile..... 15,120
Raw Products Co..... 53,190
Poel & Kelly..... 57,780
Meyer & Brown..... 61,155
F. R. Henderson & Co..... 98,280 451,035

AUGUST —. By the —— from Yokohama:
Poel & Kelly..... 142,695
Various 203,175 345,870

AUGUST —. By the —— from Kobe:
Various 139,050

AUGUST —. By the —— from Hongkong:
Fred. Stern & Co..... 24,300
Various 4,050 28,350

AUGUST —. By the —— from Singapore:
Rubber Trading Co..... 5,265
Various 228,960 234,225

[1]AUGUST —. By the —— from Kobe:
The Rubber Association of America, Inc. 1,399,815

[1] 1,716 cases shortshipped.

TO SEATTLE, WASH.

JULY —. By the —— from Singapore:
J. T. Johnstone & Co..... 70,065
Fred. Stern & Co..... 168,615
L. Littlejohn & Co..... 501,255
Poel & Kelly..... 102,600
Aldens' Successors, Limited.... 120,690
Goodyear Tire & Rubber Co.... 16,740
Robinson & Co. 74,925
Charles T. Wilson Co., Inc..... 32,400
Robert Badenhop & Co..... 48,600
Michelin Tire Co..... 23,220
W. R. Grace & Co..... 28,350
East Asiatic Co..... 97,470
Various 154,035 1,438,965

JULY —. By the —— from Singapore:
Aldens' Successors, Limited.. 87,750
Fred. Stern & Co..... 40,365
Goodyear Tire & Rubber Co.. 24,165 152,280

JULY —. By the —— from Muroran:
J. T. Johnstone & Co..... 19,440

JULY —. By the —— from Singapore:
J. T. Johnstone & Co..... 63,045
Fred. Stern & Co..... 42,120
Mitsui & Co., Limited..... 210,600
L. Littlejohn & Co..... 51,165
Robert Badenhop. Inc..... 8,505 POUNDS.
Aldens' Successors, Limited... 67,500
Robinson & Co..... 3,105 446,040

JULY —. By the —— from Kobe:
(Shortshipment ——.)
Winter, Son & Co..... 23,490

AUGUST —. By the —— from Yokohama:
Winter, Son & Co..... 22,005

AUGUST —. By the —— from Kobe:
The Rubber Association of America, Inc. 302,940
W. R. Grace & Co..... 33,480
Goodyear Tire & Rubber Co.. 44,550
Mitsui Bussan Kaisha..... 38,880 419,850

[2]AUGUST —. By the —— from Kobe:
Mitsui & Co., Limited..... 281,340

[3]AUGUST —. By the —— from Kobe:
(Shortshipment ex ——.)
Mitsui & Co., Limited..... 183,465

AUGUST —. By the —— from Hongkong:
Aldens' Successors, Limited..... 9,990

AUGUST —. By the —— from Singapore:
Aldens' Successors, Limited.. 73,980
Mitsui & Co., Limited..... 22,815
L. Littlejohn & Co..... 12,015
J. T. Johnstone & Co..... 104,760
Fred. Stern & Co..... 57,105
Robert Badenhop, Inc..... 29,835
Goodyear Tire & Rubber Co.. 21,735
Charles T. Wilson Co., Inc... 39,015
J. McCreery 111,780 473,040

[5]AUGUST —. By the —— from Kobe:
Mitsui & Co., Limited..... 31,050

[2] 352 cases shortshipped.
[3] 117 cases shortshipped.
[5] 36 cases shortshipped.

TO MALDEN, MASS.

JULY —. By the —— from Singapore:
Converse Rubber Shoe Co..... 25,245

TO PHILADELPHIA, PA.

JULY —. By the —— from Singapore:
Fourth Steel National Bank..... 23,895

TO WATERTOWN, MASS.

JULY —. By the —— from Singapore:
Hood Rubber Co..... 150,120

TO TORONTO, ONTARIO.

JULY —. By the —— from Singapore:
J. T. Johnstone & Co..... 42,795
Various 94,905 137,700

JULY —. By the —— from Singapore:
(via Vancouver.)
E. G. Curry..... 132,705

JULY —. By the —— from Muroran:
Goodyear Tire & Rubber Co..... 22,680

JULY —. By the —— from Yokohama:
Goodyear Tire & Rubber Co.. 16,335
Grace & Co., Limited..... 92,610
Alexander Macpherson & Co. 3,780
The Dunlop Tire & Rubber Co. 10,935 123,660

JULY —. By the —— from Singapore:
Charles T. Wilson Co., Inc... 6,885
Alexander Macpherson & Co. 64,395
Mitsui & Co., Limited..... 91,125 162,405

AUGUST —. By the —— from Hongkong:
W. R. Grace & Co..... 21,060

TO VANCOUVER, B. C.

JULY —. By the —— from Singapore:
The B. F. Goodrich Co..... 270,810

JULY —. By the —— from Muroran:
Edward Maurer Co., Inc..... 51,300
Winter, Son & Co..... 15,795
Goodyear Tire & Rubber Co.. 64,665 131,760

JULY —. By the —— from Yokohama:
W. R. Grace & Co..... 23,355

JULY —. By the —— from Singapore:
Balfour, Guthrie & Co..... 20,385

TO VICTORIA, B. C.

AUGUST —. By the —— from Hongkong:
Dodwell & Co..... 174,150

TO GRANBY, QUEBEC.

JULY —. By the —— from Muroran:
The Miner Rubber Co., Limited..... 5,535

AUGUST —. By the —— from Hongkong:
The Miner Rubber Co., Limited..... 3,105 POUNDS.
Various 5,535 8,640

TO MERRITON, ONTARIO.

JULY —. By the —— from Muroran:
The Independent Rubber Co., Limited... 20,385

AUGUST —. By the —— from Hongkong:
The Independent Rubber Co., Limited 4,725
Various 2,430 7,155

TO PETERBORO, ONTARIO.

JULY —. By the —— from Yokohama:
Canadian General Electric Co..... 3,780

TO GUELPH, ONTARIO.

JULY —. By the —— from Singapore:
Canadian Pacific Ry. Co..... 22,005

TO KITCHENER, ONTARIO.

JULY —. By the —— from Singapore:
Bank of Montreal..... 26,325

GUTTA AND PONTIANAK.

TO NEW YORK.

JULY —. By the —— from Singapore:
Chemical National Bank of New York:
Untreated gutta jelutong..... 154,750
Gutta siak 40,500
The Equitable Trust Co. of N. Y. 41,000 236,250

JULY —. By the —— from Singapore:
The United Malaysian Rubber Co., Limited:
Gutta siak 60,750
Gutta jelutong, untreated. 220,000 280,750

AUGUST —. By the —— from Singapore:
L. Littlejhon & Co.:
Gutta siak 212,250

TO SEATTLE, WASH.

JULY —. By the —— from Singapore:
L. Littlejohn & Co.:
Gutta jelutong 108,000

SAN FRANCISCO.[1]
PLANTATIONS.

[*Figured 135 pounds net to the case.*]

JULY —. By the —— from Singapore:
Aldens' Successors, Limited... 100,710
Edward Maurer Co., Inc..... 15,390
Firestone Tire & Rubber Co.. 203,175
L. Littlejohn & Co..... 241,380
The B. F. Goodrich Co..... 149,580
Goodyear Tire & Rubber Co... 130,275
William H. Stiles..... 5,400
Robinson & Co..... 4,050
Fred. Stern & Co..... 8,100 858,060

JULY —. By the —— from Batavia:
Arnold & Zeiss 103,410
Harrison & Crosfield..... 35,505
Fred. Stern & Co..... 37,800
Peninsular Trading Agency.. 19,305
Edward Maurer Co., Inc..... 34,965
W. R. Grace & Co..... 173,205 404,190
(Shortshipped ex ——.)
J. T. Johnstone & Co..... 24,300
The Rubber Association of America, Inc. 405 24,705
(Shortshipped ex ——.)
J. T. Johnstone & Co..... 270
The Rubber Association of America, Inc. 405 675

AUGUST —. By the —— from Soerabaia:
Hongkong & Shanghai Banking Co..... 104,490

AUGUST —. By the —— from Soerabaia:
The B. F. Goodrich Co..... 193,725

AUGUST —. By the —— from Singapore:
Aldens' Successors, Limited.. 200,205
Goodyear Tire & Rubber Co.. 40,635
F. R. Henderson & Co..... 15,255
Fred. Stern & Co..... 243,540
L. Littlejohn & Co..... 184,275
Robert Badenhop, Inc..... 166,590
Curry, McPhilips & Co..... 58,050
Meyer & Brown..... 112,050
United States Rubber Co.... 302,805
William H. Stiles..... 62,100
Ruber Trading Co..... 80,730
J. T. Johnstone & Co..... 21,600
Hood Rubber Co..... 173,205
Swinehart Tire & Rubber Co.. 118,800 1,779,840

[1]Footnote.—The figures under this head and under Crude Rubber Arrivals at Pacific Coast as Reported, have been obtained from different sources; repetitions may, therefore, occur.

Official India Rubber Statistics for the United States

Fiscal Year Ended June 30, 1917.

INDIA RUBBER.

IMPORTS OF CRUDE INDIA RUBBER BY COUNTRIES (FREE).

From—	Pounds.	Value.
EUROPE—		
France	616,772	$300,052
Malta, Gozo, etc.	4,836	1,907
Netherlands	102,726	69,522
Portugal	3,719,703	1,439,498
England	78,742,217	51,851,269
Totals, Europe	83,186,254	$53,662,248
NORTH AMERICA—		
British Honduras	1,378	$411
Canada	2,229,868	1,310,705
Central American States—		
Costa Rica	117,244	61,424
Guatemala	132,970	64,032
Honduras	79,041	37,552
Nicaragua	700,645	314,975
Panama	263,968	105,746
Salvador	52,685	26,771
Mexico	1,488,636	611,209
West Indies—		
British—		
Trin. and Tobago	2,655	1,258
Other British	25,192	18,592
Cuba	106,389	74,444
Totals, North America	5,200,671	$2,627,119
SOUTH AMERICA—		
Argentina	236,974	$130,619
Bolivia	17,210	5,186
Brazil	56,818,966	25,654,924
Chile	748,834	392,624
Colombia	1,317,509	492,432
Ecuador	756,822	296,208
Guiana—		
British	37,735	23,543
Dutch	38,766	23,639
Peru	2,516,729	1,227,776
Uruguay	89,921	53,015
Venezuela	513,006	249,867
Totals, South America	63,092,472	$28,549,833
ASIA—		
Aden	958	$479
China	2,841	1,863
East Indies—		
British—		
British India	1,257,287	759,815
Straits Settlem'ts	110,951,543	62,300,147
Other British	24,195,538	13,933,089
Dutch	45,027,410	27,239,501
Hongkong	197,845	163,182
Japan	67,133	34,468
Totals, Asia	181,700,555	$104,432,544
OCEANIA—		
Philippine Islands	45,061	$21,785
AFRICA—		
British West Africa	144,963	$33,487
Portuguese Africa	3,735	1,658
Totals, Africa	148,698	$35,145
Totals, 1916-17	333,373,711	$189,328,674
Totals, 1915-16	267,775,557	155,044,790
Totals, 1914-15	172,068,428	83,030,269
Totals, 1913-14	131,995,742	71,219,851
Totals, 1912-13	113,384,359	90,170,316
Totals, 1911-12	110,210,173	93,013,255
Totals, 1910-11	72,046,260	76,244,603
Totals, 1909-10	101,044,681	101,078,825
Totals, 1908-09	88,359,895	61,709,723
Totals, 1907-08	62,233,160	36,613,185
Totals, 1906-07	76,963,838	58,919,981
Totals, 1905-06	57,844,345	45,114,450

IMPORTS OF CRUDE INDIA RUBBER BY CUSTOMS DISTRICTS (FREE).

At—	Pounds.	Value.
Massachusetts	1,299,922	$618,494
New York	246,053,401	138,215,435
Philadelphia	47,022	17,221
New Orleans	432,712	179,836
San Francisco	32,931,122	20,703,757
Southern California	1,984	540
Washington	40,205,857	22,401,247
Buffalo	2,104,536	1,226,139
Dakota	287,073	146,960
Michigan	1,728,982	1,034,873
Ohio	7,605,768	4,354,523
St. Lawrence	160,504	130,775
Vermont	475,862	276,193
Colorado	38,386	21,796
Minnesota	580	885
Totals, 1916-17	333,373,711	$189,328,674

IMPORTS OF MANUFACTURES OF INDIA RUBBER BY COUNTRIES (DUTIABLE).

[+ indicates increase; — indicates decrease, compared with the preceding year.]

From—	Value.
EUROPE—	
France	$4,849—
Germany	691—
Gibraltar	31+
Italy	968—
Netherlands	27—
Norway	324+
Spain	191+
Switzerland	242+
United Kingdom—	
England	373,804+
Scotland	23,724—
Total, Europe	$404,851+
NORTH AMERICA—	
Canada	$155,252+
Mexico	16+
Cuba	29—
Total, North America	$155,297+
SOUTH AMERICA—	
Colombia	$2,535+
ASIA—	
China	$281+
Straits Settlements	15,255+
Dutch East Indies	20+
Japan	29,788+
Total, Asia	$45,344+
OCEANIA—	
Australia	$927+
Total, 1916-17	$608,954
Total, 1915-16	398,020
Total, 1914-15	791,281
Total, 1913-14	1,517,789
Total, 1912-13	1,217,236
Total, 1911-12	874,736
Total, 1910-11	875,125
Total, 1909-10	1,154,347
Total, 1908-09	1,391,770
Total, 1907-08	1,956,590
Total, 1906-07	2,262,783
Total, 1905-06	1,992,413

IMPORTS OF INDIA RUBBER BY CUSTOMS DISTRICTS (DUTIABLE).

At—	Value.
Georgia	$13
Maine and New Hampshire	881
Maryland	965
Massachusetts	30,238
New York	436,846
Philadelphia	4,386
Rhode Island	15
Virginia	94
Florida	5
Mobile	23
New Orleans	15
Laredo	2
Hawaii	1,621
Oregon	373
San Francisco	5,275
Southern California	34
Washington	243
Buffalo	751
Chicago	2,961
Dakota	85
Michigan	80,245
Montana and Idaho	510
Ohio	36,305
St. Lawrence	904
Vermont	290
Wisconsin	704
Indiana	97
Minnesota	419
Pittsburgh	4,046
St. Louis	108
Total, 1916-17	$608,954

REEXPORTS OF IMPORTED CRUDE INDIA RUBBER.

To—	Pounds.	Value.
Germany	1,634,503	$1,146,834
Russia in Europe	75,911	76,365
England	222,351	114,548
Canada	5,429,092	3,237,086
Japan	9,415	8,026
Russia in Asia	4,973,530	2,713,972
Australia	11,096	7,989
Totals, 1916-17	12,355,898	$7,304,820
Totals, 1915-16	4,662,889	2,661,331
Totals, 1914-15	6,383,145	3,361,107
Totals, 1913-14	3,747,749	2,398,150
Totals, 1912-13	5,272,387	4,476,379
Totals, 1911-12	5,610,951	4,890,905
Totals, 1910-11	5,267,588	5,439,282
Totals, 1909-10	6,492,947	7,629,380
Totals, 1908-09	3,791,971	2,964,496
Totals, 1907-08	4,110,667	2,994,208
Totals, 1906-07	4,215,350	3,593,912

REEXPORTS OF MANUFACTURES OF INDIA RUBBER.

To—	Value.
France	$191
Netherlands	100
England	825
Canada	8,620
Mexico	9
Cuba	219
Dominican Republic	147
Argentina	681
Uruguay	113
Total, 1916-17	$10,905
Total, 1915-16	38,649
Total, 1914-15	7,489
Total, 1913-14	7,638
Total, 1912-13	7,973
Total, 1911-12	6,681
Total, 1910-11	29,356
Total, 1909-10	13,568
Total, 1908-09	36,401
Total, 1907-08	176,129
Total, 1906-07	32,712

GUTTA PERCHA.

IMPORTS OF CRUDE GUTTA PERCHA BY COUNTRIES (FREE).

From—	Pounds.	Value.
EUROPE—		
France	1,188	$2,393
Netherlands	22,188	2,651
England	140,371	91,460
Totals, Europe	163,747	$96,504
SOUTH AMERICA—		
Argentina	9,954	$2,303
Peru	1,881	1,275
Totals, South America	11,835	$3,578
ASIA—		
Straits Settlements	1,439,046	$156,820
Dutch East Indies	202,815	22,635
Totals, Asia	1,641,861	$179,455
OCEANIA—		
Philippine Islands	17,701	$2,290
AFRICA—		
British West Africa	186,650	$50,396
Totals, 1916-17	2,021,794	$332,223
Totals, 1915-16	3,188,449	342,226
Totals, 1914-15	1,618,214	230,750
Totals, 1913-14	1,846,109	323,567
Totals, 1912-13	480,853	167,313
Totals, 1911-12	1,204,406	225,797
Totals, 1910-11	1,648,921	390,548
Totals, 1909-10	784,501	167,873
Totals, 1908-09	255,559	82,136
Totals, 1907-08	188,610	100,305
Totals, 1906-07	546,890	201,339
Totals, 1905-06	500,770	188,161

IMPORTS OF CRUDE GUTTA PERCHA BY CUSTOMS DISTRICTS (FREE).

At—	Pounds.	Value.
Massachusetts	138,000	$5,450
New York	1,612,996	298,828
San Francisco	33,832	3,951
Washington	236,966	23,994
Totals	2,021,794	$332,223

IMPORTS OF MANUFACTURES OF GUTTA PERCHA BY COUNTRIES (DUTIABLE).

From—	Value.
EUROPE—	
Germany	$208
United Kingdom—	
England	123,646
Scotland	47,953
Total, Europe	$171,807
NORTH AMERICA—	
Canada	$2,140
ASIA—	
Japan	$28
Total, 1916-17	$173,975
Total, 1915-16	57,875
Total, 1914-15	10,841
Total, 1913-14	42,023
Total, 1912-13	77,300
Total, 1911-12	41,098
Total, 1910-11	61,283
Total, 1909-10	80,567
Total, 1908-09	71,819
Total, 1907-08	93,545

IMPORTS OF MANUFACTURED GUTTA PERCHA BY CUSTOMS DISTRICTS (DUTIABLE).

At—	Value.
New York	$172,601
Philadelphia	142
Hawaii	2
San Francisco	20
Chicago	219
Ohio	538
Rochester	24
St. Lawrence	13
Indiana	346
Minnesota	1
St. Louis	69
Total	$173,975

REEXPORTS OF CRUDE GUTTA PERCHA.

To—	Pounds.	Value.
Canada	763	$558
Totals, 1916-17	763	$558
Totals, 1915-16	60,023	11,446
Totals, 1914-15	9,457	4,603
Totals, 1913-14	14,649	5,255
Totals, 1912-13	22,352	2,665
Totals, 1911-12	1,011	945
Totals, 1910-11	62,391	19,235
Totals, 1909-10	74,137	13,886
Totals, 1908-09	9,370	3,730
Totals, 1907-08	.....	.....
Totals, 1906-07	5,000	700

REEXPORTS OF MANUFACTURES OF GUTTA PERCHA.

To—	Value.
Canada	$420
Mexico	1
Total, 1916-17	$421
Total, 1915-16	537
Total, 1914-15	—
Total, 1913-14	—
Total, 1912-13	—
Total, 1911-12	65
Total, 1910-11	8,687

GUAYULE.

IMPORTS OF GUAYULE BY COUNTRIES (FREE).

From—	Pounds.	Value.
Mexico	2,845,388	$760,499
Venezuela	8,984	3,985
Totals, 1916-17	2,854,372	$764,484
Totals, 1915-16	2,816,068	880,813
Totals, 1914-15	5,111,849	1,441,367
Totals, 1913-14	1,475,804	607,076
Totals, 1912-13	10,218,191	4,345,088
Totals, 1911-12	14,238,625	6,463,787
Totals, 1910-11	19,749,522	10,443,157

IMPORTS OF GUAYULE BY CUSTOMS DISTRICTS (FREE).

At—	Pounds.	Value.
New York	8,984	$3,985
Eagle Pass	1,472,293	402,205
El Paso	2,437	975
Laredo	1,370,658	357,319
Totals	2,854,372	$764,484

JELUTONG.

IMPORTS OF JELUTONG (PONTIANAK) BY COUNTRIES (DUTIABLE).

From—	Pounds.	Value.
EUROPE—		
Netherlands	115,136	$9,584
England	76,606	6,551
Totals, Europe	191,742	$16,135
ASIA—		
Straits Settlements	15,110,389	$686,000
Dutch East Indies	8,073,588	341,786
Japan	670	101
Totals, Asia	23,184,647	$1,027,887
Totals, 1916-17	23,376,389	1,044,022
Totals, 1915-16	27,858,335	1,322,262
Totals, 1914-15	14,851,264	731,995
Totals, 1913-14	24,926,571	1,155,402
Totals, 1912-13	45,345,338	2,174,441
Totals, 1911-12	48,795,268	2,255,050
Totals, 1910-11	51,420,872	2,872,633
Totals, 1909-10	52,392,444	2,419,223
Totals, 1908-09	24,826,296	852,372
Totals, 1907-08	22,803,303	1,039,776
Totals, 1906-07	28,437,660	1,085,098
Totals, 1905-06	21,390,116	733,074
Totals, 1904-05	19,104,911	641,319
Totals, 1903-04	14,887,416	430,231
Total. 1902-03	13,984,817	345,431
Totals, 1901-02	16,850,821	501,418
Totals, 1900-01	9,371,087	248,838
Totals, 1899-00	8,701,753	237,214
Totals, 1898-99	6,473,882	166,419

IMPORTS OF JELUTONG (PONTIANAK) BY CUSTOMS DISTRICTS (DUTIABLE).

At—	Pounds.	Value.
Massachusetts	851,441	$37,422
New York	19,806,791	874,621
San Francisco	301,262	18,694
Washington	2,416,895	113,285
Totals	23,376,389	$1,044,022

BALATA.

IMPORTS OF BALATA BY COUNTRIES (FREE).

From—	Pounds.	Value.
EUROPE—		
Scotland	17,089	$8,545
NORTH AMERICA—		
Central American States—		
Panama	1,125,476	$458,579
Salvador	1,441	651
British West Indies—		
Trin. and Tobago	5,058	2,318
Other British	40,313	25,506
Haiti	2,912	1,546
Total, North America	1,175,200	$488,600
SOUTH AMERICA—		
Bolivia	9,001	$6,389
Brazil	9,557	4,296
Colombia	540,616	243,322
Ecuador	10,510	3,908
Guiana—		
British	235,598	150,102
Dutch	588,468	398,670
Peru	8,800	4,400
Venezuela	692,606	341,220
Totals, South America	2,095,156	$1,152,307
Totals, 1916-17	3,287,445	1,649,452
Totals, 1915-16	2,544,405	996,102
Totals, 1914-15	2,472,224	963,384
Totals, 1913-14	1,533,024	793,126
Totals, 1912-13	1,318,598	766,772
Totals, 1911-12	1,517,066	984,012
Totals, 1910-11	878,305	624,702
Totals, 1909-10	399,003	196,878
Totals, 1908-09	1,157,018	522,872
Totals, 1907-08	584,582	276,756
Totals, 1906-07	799,029	305,041
Totals, 1905-06	374,220	152,689

IMPORTS OF BALATA BY CUSTOMS DISTRICTS (FREE).

At—	Pounds.	Value.
New York	3,287,445	$1,649,452

REEXPORTS OF BALATA.

To—	Pounds.	Value.
United Kingdom—		
England	758,750	$404,328
Scotland	99,385	54,099
Canada	2,152	1,898
Brazil	1,288	1,043
British Guiana	150	84
Japan	13,184	10,536
Australia	4,856	2,550
Totals, 1916-17	879,765	$474,538
Totals, 1915-16	667,168	245,329
Totals, 1914-15	1,076,619	426,735
Totals, 1913-14	223,983	127,139
Totals, 1912-13	118,334	77,963
Totals, 1911-12	62,529	38,423
Totals, 1910-11	264,589	235,575
Totals, 1909-10	.....	42,750
Totals, 1908-09	.....	223,907
Totals, 1907-08	.....	18,741
Totals, 1906-07	.....	12,659

RECLAIMED RUBBER.

EXPORTS OF RECLAIMED RUBBER BY COUNTRIES.

To—	Pounds.	Value.
EUROPE—		
France	155,548	$23,735
United Kingdom—		
England	483,620	94,292
Scotland	40,611	6,700
Totals, Europe	679,779	$124,727
NORTH AMERICA—		
Canada	4,140,129	$669,202
Honduras	1,217	251
Mexico	600	59
Totals, North America	4,141,946	$669,512
SOUTH AMERICA—		
Argentina	4,569	$678
ASIA—		
Japan	39,244	$7,332
OCEANIA—		
Australia	73,453	$11,950
Totals, 1916-17	4,938,991	$814,199
Totals, 1915-16	6,406,946	871,262
Totals, 1914-15	5,970,380	822,561
Totals, 1913-14	5,583,860	834,440
Totals, 1912-13	5,413,247	932,904
Totals, 1911-12	5,397,806	875,501
Totals, 1910-11	4,994,527	781,650
Totals, 1909-10	3,622,556	535,795
Totals, 1908-09	3,196,551	414,861
Totals, 1907-08	2,947,974	418,738
Totals, 1906-07	4,550,788	665,109
Totals, 1905-06	4,084,696	511,843
Totals, 1904-05	(a)	522,902

(a) Not officially reported.

EXPORTS OF RECLAIMED RUBBER BY CUSTOMS DISTRICTS.

From—	Pounds.	Value.
Massachusetts	40,611	$6,700
New York	717,932	133,466
New Orleans	1,217	251
Laredo	600	59
San Francisco	38,502	4,521
Buffalo	1,414,689	232,304
Michigan	172,962	15,407
St. Lawrence	643,225	102,501
Vermont	1,909,253	318,990
Totals	4,938,991	$814,199

SUBSTITUTES, ELASTICON, ETC.

IMPORTS OF ELASTICON AND SIMILAR SUBSTITUTES FOR INDIA RUBBER BY COUNTRIES (DUTIABLE).

From—	
EUROPE—	
Germany	$80
Spain	85
England	22,664
Total, Europe	$22,829
SOUTH AMERICA—	
Colombia	$1,521
ASIA—	
Straits Settlements	$15,391
Japan	74
Total, Asia	$15,465
Total, 1916-17	$39,815
Total, 1915-16	16,179
Total, 1914-15	30,349
Total, 1913-14	87,642
Total, 1912-13	97,452
Total, 1911-12	87,328
Total, 1910-11	115,601
Total, 1909-10	114,516
Total, 1908-09	60,625
Total, 1907-08	27,000

IMPORTS OF ELASTICON AND SIMILAR SUBSTITUTES FOR INDIA RUBBER BY CUSTOMS DISTRICTS (DUTIABLE).

At—	Value.
Massachusetts	$5,254
New York	34,561
Total	$39,815

SCRAP RUBBER.

IMPORTS OF SCRAP RUBBER BY COUNTRIES (FREE).

From—	Pounds.	Value.
EUROPE—		
France	1,408,080	$94,099
Germany	7,820	547
Italy	528,015	114,806
Norway	111,428	10,886
United Kingdom—		
England	12,290,815	938,932
Scotland	56,727	3,216
Totals, Europe	14,402,885	$1,162,486
NORTH AMERICA—		
Canada	4,684,019	$319,434
Central American States—		
Costa Rica	3,300	147
Panama	54,812	3,599
Mexico	11,413	597
Newfoundland and Labrador	12,431	913
British West Indies—		
Jamaica	28,339	2,044
Trin. and Tobago	5,794	307
Other British	2,882	103
Cuba	604,600	37,507
Danish West Indies	2,213	97
Dominican Republic	2,664	181
Haiti	374	37
Totals, North America	5,412,841	$364,966
SOUTH AMERICA—		
Argentina	188,523	$11,874
Brazil	99,040	11,802
Ecuador	1,417	80
Venezuela	17,557	703
Totals, South America	306,537	$24,459
ASIA—		
British India	132	$9
Other British East Indies	207	12
Dutch East Indies	184	12
Hongkong	33,000	1,233
Japan	33,066	2,443
Totals, Asia	66,589	$3,709
OCEANIA—		
Australia	328,176	$13,738
New Zealand	300	90
Totals, Oceania	328,476	$13,828
Totals, 1916-17	20,517,328	$1,569,448
Totals, 1915-16	16,371,573	1,271,903
Totals, 1914-15	11,006,928	726,915
Totals, 1913-14	25,958,261	2,063,198
Totals, 1912-13	43,385,456	3,709,238
Totals, 1911-12	26,293,192	2,095,605
Totals, 1910-11	26,948,000	2,334,870
Totals, 1909-10	37,364,671	2,998,697
Totals, 1908-09	20,497,695	1,543,267
Totals, 1907-08	16,331,035	1,496,822
Totals, 1906-07	29,335,193	2,608,987

IMPORTS OF SCRAP RUBBER BY CUSTOMS DISTRICTS (FREE).

At—	Pounds.	Value.
Maine and New Hampshire	418,934	$36,552
Maryland	2,060,160	242,336
Massachusetts	881,824	38,932
New York	12,745,388	961,973
Philadelphia	15,865	871
Porto Rico	2,213	97
Florida	31,478	1,789
Arizona	2,368	71
El Paso	489	16
San Francisco	93,068	3,575
Buffalo	1,237,404	81,010
Chicago	751,723	51,155
Dakota	151,901	7,781
Michigan	764,923	53,569
Ohio	3,706	481
St. Lawrence	271,984	27,184
Vermont	1,083,703	62,026
Minnesota	197	30
Totals	20,517,328	$1,569,448

EXPORTS OF SCRAP RUBBER BY COUNTRIES.

To—	Pounds.	Value.
EUROPE—		
France	117,984	$20,074
Italy	65	10
United Kingdom—		
England	890,194	148,488
Scotland	942,785	116,441
Totals, Europe	1,951,028	$285,012
NORTH AMERICA—		
Canada	1,496,320	$112,418
Honduras	857	42
Mexico	2,678	124
Totals, North America	1,499,855	$112,584
SOUTH AMERICA—		
Chile	22,046	$759
ASIA—		
China	559	$43
Japan	223,173	17,127
Totals, Asia	223,732	$17,170
Totals, 1916-17	3,696,661	$415,526
Totals, 1915-16	3,904,715	400,148
Totals, 1914-15	2,422,091	291,421
Totals, 1913-14	6,207,672	598,287
Totals, 1912-13	7,269,465	880,442
Totals, 1911-12	7,336,984	780,188
Totals, 1910-11	7,049,729	723,664
Totals, 1909-10	6,143,610	578,944
Totals, 1908-09	4,071,795	402,897
Totals, 1907-08	4,255,789	449,727
Totals, 1906-07	4,756,621	548,695
Totals, 1905-06	a	339,507
Totals, 1904-05	a	204,945

(a) Not officially reported.

EXPORTS OF SCRAP RUBBER BY CUSTOMS DISTRICTS.

From—	Pounds.	Value.
Maine and New Hampshire	1,045	$78
Massachusetts	410,290	46,206
New York	1,463,729	229,701
Philadelphia	157,313	15,713
Florida	857	42
Sabine	78	4
Eagle Pass	2,400	110
Laredo	200	10
San Francisco	559	43
Washington	164,915	11,279
Buffalo	312,465	21,975
Duluth and Superior	497	17
Michigan	485,439	41,859
Montana and Idaho	40	2
St. Lawrence	240,542	21,251
Vermont	456,292	27,236
Totals	3,696,661	$415,526

REEXPORTS OF SCRAP RUBBER.

To—	Pounds.	Value.
Canada	1,626	$215
Totals, 1916-17	1,626	$215
Totals, 1915-16	9,204	734
Totals, 1914-15	3,483	373
Totals, 1913-14	24,295	2,450
Totals, 1912-13	87,930	10,723
Totals, 1911-12	302,105	28,196
Totals, 1910-11	401,231	43,338
Totals, 1909-10	61,395	5,373
Totals, 1908-09	38,506	2,093
Totals, 1907-08	21,713	2,943
Totals, 1906-07	105,463	9,444

EXPORTS OF AMERICAN RUBBER GOODS, FISCAL YEAR ENDED JUNE 30, 1917. (BY COUNTRIES.)

EXPORTED TO—	Belting, Hose and Packing. Value.	Boots. Pairs.	Boots. Value.	Shoes. Pairs.	Shoes. Value.	Tires. Automobile. Value.	Tires. Other. Value.	Other Goods. Value.	Total Value.
EUROPE:									
Azores and Madeira Islands	.....	.....	.....	56	$36	.....	.....	$54	$90
Denmark	$10,232	267	$1,027	49,818	22,886	$6,917	$10,361	32,353	83,776
Finland	1,910	.....	.....	.....	.....	.....	.....	1,440	3,350
France	51,568	108,922	381,826	236,635	102,420	425,132	320,858	928,943	2,210,747
Gibraltar	.....	.....	.....	.....	.....	.....	.....	45	45
Greece	2,582	.....	.....	.....	.....	34,654	.....	1,598	38,834
Iceland and Faroe Islands	320	52	71	.....	.....	61	.....	3,229	3,681
Italy	3,144	87	289	52,887	38,840	101,362	144,844	132,901	421,380
Netherlands	10,709	.....	.....	22,529	8,199	26,326	3,359	26,537	75,130
Norway	23,843	.....	.....	5,564	2,824	11,937	51	23,994	62,649
Portugal	11,968	.....	.....	.....	.....	9,055	1,492	4,663	27,178
Russia in Europe	3,334	500	3,407	1,049	553	143,916	.....	43,282	194,492
Spain	2,329	.....	.....	.....	.....	77,753	3,997	20,950	105,029
Sweden	50,130	.....	.....	.....	.....	6,347	532	7,007	64,016
Switzerland	.....	.....	.....	37,678	18,143	.....	.....	13,142	31,285
United Kingdom—									
England	523,875	343,487	694,473	1,885,947	847,653	2,569,901	1,063,585	2,443,481	8,142,968
Scotland	100,221	7,187	14,185	111,545	40,168	66,753	15	13,687	235,029
Ireland	.....	.....	.....	344	107	.....	.....	.....	107
Totals, Europe	$796,165	460,502	$1,095,278	2,404,052	$1,081,829	$3,480,114	$1,549,094	$3,697,306	$11,699,786
NORTH AMERICA:									
Bermuda	$1,370	27	$76	1,724	$1,302	$14	$1,112	$4,772	$8,646
British Honduras	1,048	.....	.....	10,282	7,090	590	234	2,130	11,092
Canada	468,126	68,701	186,331	92,739	72,871	1,485,939	49,493	1,871,942	4,134,702
Central American States—									
Costa Rica	8,085	.....	.....	618	330	11,918	2,572	11,405	34,310
Guatemala	10,119	.....	.....	252	212	24,545	1,928	14,522	51,326
Honduras	8,960	3	8	1,311	1,110	19,657	552	7,726	38,013
Nicaragua	11,737	26	178	380	301	294	30	13,388	25,928
Panama	87,109	378	1,016	20,300	18,525	74,047	26,194	50,286	257,177
Salvador	10,860	.....	.....	310	226	22,530	3,091	24,865	61,572
Mexico	265,680	104	460	8,389	8,295	257,413	65,364	184,578	781,790
Miquelon, Langley, etc	27	4,216	10,119	2,058	1,261	.....	.....	633	12,040
Newfoundland and Labrador	9,275	42,590	103,684	116,875	81,508	8,243	1,234	31,382	235,326
West Indies—									
British:									
Barbados	878	24	74	134	54	15,666	2,507	3,144	22,323
Jamaica	5,950	11	29	4,023	2,263	109,048	10,587	13,149	141,026
Trinidad and Tobago	9,517	8	24	11,960	7,070	45,654	2,723	17,051	82,039
Other British	2,933	.....	.....	4,337	2,477	21,526	7,379	5,599	39,914
Cuba	252,110	594	1,596	30,711	22,825	1,019,915	174,132	449,994	1,920,572
Danish	635	.....	.....	180	131	2,753	151	1,400	5,070
Dominican Republic	11,837	6	13	3,565	2,422	37,441	6,105	22,208	80,026
Dutch	1,517	.....	.....	159	128	7,386	1,249	2,997	13,277
French	1,301	1	6	1,624	765	19,399	4,600	1,890	27,961
Haiti	2,389	6	21	197	154	2,287	1,310	4,514	10,675
Totals, North America	$1,171,463	116,695	$303,635	312,128	$231,320	$3,186,265	$362,547	$2,739,575	$7,994,805

EXPORTS OF AMERICAN RUBBER GOODS, FISCAL YEAR ENDED JUNE 30, 1917. (BY COUNTRIES.)

EXPORTED TO—	Belting, Hose and Packing.	Boots.		Shoes.		Tires.		Other Goods.	Total
SOUTH AMERICA:	Value.	Pairs.	Value.	Pairs.	Value.	Automobile. Value.	Other. Value.	Value.	Value.
Argentina	$131,918	1,519	$3,221	11,206	$7,841	$1,301,344	$99,868	$273,641	$1,818,833
Bolivia	15,235	72	200	.....	.....	9,187	3,803	3,193	31,618
Brazil	144,554	254	892	42,717	24,059	696,876	31,818	256,182	1,154,381
Chile	274,164	1,727	6,951	10,487	5,628	264,603	22,941	139,525	713,812
Colombia	16,351	26	102	6,817	4,018	39,298	5,782	42,052	107,603
Ecuador	8,451	8	38	1,116	810	13,645	1,674	17,647	42,265
Falkland Islands	.....	.....	.....	.....	.....	1,817	.....	.....	1,817
Guiana—									
British	2,142	.....	.....	4,066	1,675	10,171	2,914	2,462	19,364
Dutch	591	.....	.....	456	168	2,588	309	1,835	5,491
French	.....	.....	.....	.....	.....	45	.....	135	180
Paraguay	.....	.....	.....	.....	.....	35	.....	108	143
Peru	46,829	1,774	9,666	1,326	1,039	27,934	6,303	64,822	156,593
Uruguay	21,926	231	715	5,605	5,211	100,427	22,282	37,535	188,096
Venezuela	16,280	.....	.....	358	274	128,966	24,869	54,098	224,487
Totals, South America	$678,441	5,611	$21,785	84,154	$50,723	$2,596,936	$222,563	$893,235	$4,463,683
ASIA:									
Aden	.....	.....	.....	.....	.....	$440	.....	.....	$440
China	$18,115	3	$7	4,485	$4,001	36,952	$1,650	$25,762	86,487
China, leased territories—									
Japanese	150	.....	.....	.....	.....	.....	.....	1,778	1,928
Chosen	9,774	.....	.....	108	60	3,909	.....	1,329	15,072
East Indies—									
British:									
British India	25,855	2	8	1,936	1,095	145,820	21,062	46,821	240,661
Straits Settlements	5,094	72	158	3,818	1,429	142,271	9,919	4,368	163,239
Other British	253	12	61	2,507	1,562	6,692	1,827	2,475	12,870
Dutch	35,356	.....	.....	2,837	3,011	415,742	60,083	44,067	558,259
French	3,086	.....	.....	.....	.....	.....	.....	417	3,503
Hongkong	6,954	165	508	2,296	1,426	3,252	4,132	2,082	18,354
Japan	158,358	985	3,120	38,388	26,215	34,243	3,230	139,239	364,405
Persia	1,875	.....	.....	.....	.....	.....	.....	.....	1,875
Russia in Asia	8,017	1,832	11,997	.....	.....	12,432	4,116	38,208	74,770
Siam	180	.....	.....	.....	.....	8,547	749	1,655	11,131
Totals, Asia	$273,067	3,071	$15,859	56,375	$38,799	$810,300	$106,768	$308,201	$1,552,994
OCEANIA:									
British Oceania—									
Australia	$131,716	5,482	$16,207	147,068	$76,609	$783,209	$33,993	$180,467	$1,222,201
New Zealand	22,724	5,165	17,316	20,435	11,837	689,705	68,496	246,224	1,056,302
Other British	191	24	42	5,273	3,755	5,008	323	477	9,796
French Oceania	2,040	.....	.....	11,291	8,977	8,102	1,718	1,768	22,605
German Oceania	126	.....	.....	962	861	518	203	218	1,926
Philippine Islands	63,697	378	1,480	288,268	198,896	345,702	100,484	114,395	824,654
Totals, Oceania	$220,494	11,049	$35,045	473,297	$300,935	$1,832,244	$205,217	$543,549	$3,137,484
AFRICA:									
Belgian Congo	$444	.....	.....	.....	.....	.....	.....	.....	$444
British Africa—									
West	284	.....	.....	324	$251	$10,967	$290	$1,854	13,646
South	361,432	3,527	$11,777	25,587	12,073	391,211	97,621	75,211	949,325
East	279	.....	.....	.....	.....	20,162	3,531	618	24,590
Canary Islands	12	.....	.....	.....	.....	.....	.....	85	97
Egypt	102	.....	.....	504	261	1,316	.....	3,155	4,834
French Africa	145	.....	.....	.....	.....	420	.....	.....	565
Italian Africa	.....	.....	.....	.....	.....	174	.....	.....	174
Liberia	19	.....	.....	.....	.....	92	.....	10	121
Madagascar	921	.....	.....	8	5	.....	.....	25	951
Portuguese Africa	29,115	.....	.....	55	29	.....	21	2,685	31,850
Totals, Africa	$392,753	3,527	$11,777	26,478	$12,619	$424,342	$101,463	$83,643	$1,026,597
Grand totals, 1916-17	$3,532,384	600,455	$1,483,379	3,356,484	$1,716,225	$12,330,201	$2,547,652	$8,265,509	$29,875,350
Grand totals, 1915-16	2,986,953	720,130	1,619,260	1,976,896	1,046,102	17,936,227	3,003,077	7,290,345	33,881,964
Grand totals, 1914-15	1,807,848	318,727	726,765	2,219,900	2,053,560	4,963,270	576,602	3,525,486	13,653,531
Grand totals, 1913-14	2,372,887	101,361	279,206	1,634,258	834,289	3,505,267	563,372	3,453,472	11,008,493
Grand totals, 1912-13	2,605,551	109,528	274,330	2,231,467	1,163,953	3,943,220	611,458	3,913,036	12,511,548
		Boots and Shoes.[1]							
		Pairs.	Value.						
Grand totals, 1911-12	$2,315,484	.....	2,545,076	$1,502,890	.....	$2,657,809	$546,833	$4,144,273	$11,167,289
Grand totals, 1910-11	2,163,416	.....	3,984,332	2,219,430	.....	2,085,107[2]	592,470	3,886,825	10,947,248
Grand totals, 1909-10	1,960,825	.....	3,791,084	1,984,739	.....	.....	.....	5,115,331	9,060,895
Grand totals, 1908-09	1,498,445	.....	2,396,435	1,292,673	.....	.....	.....	3,823,956	6,615,074
Grand totals, 1907-08	1,347,775	.....	3,080,253	1,614,290	.....	.....	.....	3,743,040	6,705,105
Grand totals, 1906-07	1,253,369	.....	2,310,420	1,231,898	.....	.....	.....	3,729,643	6,214,910
Grand totals, 1905-06	1,221,159	.....	2,693,690	1,505,082	.....	.....	.....	2,966,144	5,692,385
Grand totals, 1904-05	994,100	.....	2,390,539	1,214,342	.....	.....	.....	2,572,375	4,780,817
Grand totals, 1903-04	880,010	.....	2,310,420	1,231,898	.....	.....	.....	3,729,643	6,214,910
Grand totals, 1902-03	819,985	.....	2,307,401	1,056,491	.....	.....	.....	2,299,875	4,176,351
Grand totals, 1901-02	634,146	.....	2,594,708	1,046,315	.....	.....	.....	1,781,941	3,462,402
Grand totals, 1900-01	565,726	.....	1,459,100	724,015	.....	.....	.....	1,727,527	3,017,268

[1] States separately after 1912. [2] Tires were not specifically reported before 1910-11.

EXPORTS OF AMERICAN RUBBER GOODS, FISCAL YEAR ENDED JUNE 30, 1917. (BY CUSTOMS DISTRICTS.)

EXPORTED FROM—	Belting, Hose and Packing.	Boots.		Shoes.		Tires.		Other Goods.	Total
	Value.	Pairs.	Value.	Pairs.	Value.	Automobile. Value.	Other. Value.	Value.	Value.
Georgia	$134	.....	.....	.....	.....	$229	$30,451	.....	$30,814
Maine and New Hampshire	10,212	15,007	$39,037	16,025	$9,042	6,962	540	$33,414	99,207
Maryland	5,695	.....	.....	.....	.....	13,143	.....	1,087	19,925
Massachusetts	21,003	321,593	660,212	1,228,732	579,609	34,248	859	216,636	1,512,567
New York	2,404,915	196,462	579,936	1,770,824	871,025	8,017,736	2,209,969	5,604,459	19,688,040
Philadelphia	20,704	.....	.....	5	5	266,557	.....	62,862	350,128
Porto Rico	570	.....	.....	.....	.....	2,725	6	1,947	5,248
Rhode Island	.....	.....	.....	.....	.....	288	.....	266	554
Virginia	.....	.....	.....	.....	.....	1,667	.....	18	1,685
Florida	4,106	.....	.....	441	455	258,256	9,038	15,613	287,468
Galveston	944	.....	.....	.....	.....	478	25	2,267	3,714
Mobile	66	.....	.....	376	389	918	1,129	2,204	4,706

EXPORTS OF AMERICAN RUBBER GOODS, FISCAL YEAR ENDED JUNE 30, 1917. (BY CUSTOMS DISTRICTS.)

EXPORTED FROM—	Belting, Hose and Packing. Value.	Boots. Pairs.	Boots. Value.	Shoes. Pairs.	Shoes. Value.	Tires. Automobile. Value.	Tires. Other. Value.	Other Goods. Value.	Total Value.
New Orleans	24,998	27	182	2,197	1,630	24,567	4,229	22,900	78,506
Sabine	3,694	.....	.....	.....	.....	5,632	53	365	9,744
Arizona	59,452	29	142	887	1,109	32,387	451	15,367	108,908
Eagle Pass	5,498	.....	.....	.....	.....	12,193	174	2,978	20,843
El Paso	7,812	.....	.....	.....	.....	7,928	381	6,292	22,413
Laredo	36,869	5	28	445	356	75,568	9,814	19,126	141,761
Alaska	22,295	1,278	4,395	2,107	5,949	3,200	.....	322	36,161
Hawaii	694	.....	.....	.....	.....	296	.....	30	1,020
San Francisco	348,259	8,384	36,336	124,590	94,055	1,368,475	182,217	224,369	2,253,711
Southern California	2,975	35	136	93	60	3,040	446	3,507	10,164
Washington	62,103	4,015	14,647	48,538	38,470	286,012	28,286	104,086	533,604
Buffalo	196,602	3,970	11,755	2,237	1,426	446,765	27,303	608,767	1,292,618
Dakota	132,859	6,204	22,988	96,775	64,632	678,782	36,237	224,152	1,159,650
Duluth and Superior	16,642	467	1,221	3,396	5,915	33,043	706	36,879	94,406
Michigan	30,971	39,561	102,811	962	1,324	398,730	1,591	112,552	647,979
Montana and Idaho	561	33	77	7	11	1,136	72	812	2,669
Ohio	.....	.....	.....	.....	.....	133,616	.....	679	134,295
Rochester	2	.....	.....	.....	.....	356	190	14	562
St. Lawrence	53,670	467	1,544	521	247	146,811	2,612	339,295	544,179
Vermont	58,079	2,718	7,932	57,326	40,516	68,457	873	602,244	778,101
Totals	$3,532,384	600,455	$1,483,379	3,356,484	$1,716,225	$12,330,201	$2,547,652	$8,265,509	$29,875,350

SUMMARY.

	1914-15. Pounds.	1914-15. Value.	1915-16. Pounds.	1915-16. Value.	1916-17. Pounds.	1916-17. Value.
IMPORTS OF FOREIGN MERCHANDISE—						
India rubber, etc., and substitutes for, and manufactures of:						
Unmanufactured—(*free*):						
Balata	2,472,224	$963,384	2,544,405	$996,102	3,287,156	$1,649,452
Guayule	5,111,849	1,441,367	2,816,068	880,813	2,854,372	764,484
Jelutong	14,851,264	731,995	27,858,335	1,322,262	23,376,389	1,044,022
Gutta percha	1,618,214	230,750	3,188,449	342,226	2,021,794	332,223
India rubber	172,068,428	83,030,269	267,775,557	155,044,790	333,373,711	189,328,674
India rubber scrap, fit only for remanufacture	11,006,928	726,915	16,371,573	1,271,903	20,517,328	1,569,448
Total unmanufactured imports	207,128,907	$87,124,680	320,554,387	$159,858,096	385,430,750	$194,688,303
Manufactures of—(*dutiable*):						
Gutta percha	.....	$10,841	.....	$57,875	.....	$173,975
India rubber	.....	791,281	.....	398,020	.....	608,954
Substitutes, elasticon and similar	.....	30,349	.....	16,179	.....	39,815
Total manufactured imports	.....	$832,472	.....	$472,074	.....	$822,744
REEXPORTS OF FOREIGN MERCHANDISE—						
India rubber, etc., and substitutes for, and manufactures of:						
Unmanufactured:						
Balata	1,076,619	$426,735	667,168	$245,329	879,765	$474,538
Guayule	29,891	8,901	18,500	7,770	.....	.....
Jelutong	.....	.....	58,773	2,825	.....	.....
Gutta percha	9,457	4,603	60,023	11,446	763	558
India rubber	6,383,145	3,361,107	4,662,889	2,661,301	12,355,898	7,304,820
India rubber scrap or refuse, fit only for remanufacture	3,483	373	9,204	734	1,626	215
Total unmanufactured re-exports	7,502,595	$3,801,719	5,476,557	$2,929,403	13,238,052	$7,780,131
Manufactures of:						
Gutta percha	.....	.....	.....	$537	.....	$421
India rubber	.....	$7,489	.....	38,649	.....	10,905
Substitutes, elasticon and similar	.....	364	.....	.....	.....	.....
Total manufactures reexported	.....	$7,853	.....	$39,186	.....	$11,326
EXPORTS OF DOMESTIC MANUFACTURES—						
India rubber, manufactures of:						
Scrap	2,422,091	$291,421	3,904,715	$400,148	3,696,661	$415,526
Reclaimed	5,970,380	822,561	6,406,946	871,262	4,938,991	814,199
Belting, hose and packing	.....	1,897,848	.....	2,986,953	.....	3,532,384
Boots and shoes—						
Boots (*pairs*)	318,727	726,765	720,130	1,619,260	600,455	1,483,379
Shoes	2,219,900	2,053,560	1,976,696	1,046,102	3,356,484	1,716,225
Tires—						
For automobiles	.....	4,963,270	.....	17,936,227	.....	12,330,201
All other	.....	576,602	.....	3,003,077	.....	2,547,652
All other manufactures of	.....	3,525,486	.....	7,290,345	.....	8,265,509
Total domestic manufactures exported	.....	$14,767,513	.....	$35,180,096	.....	$31,105,075

[1] Dutiable during 1916-17.

EXPORTS OF INDIA RUBBER FROM PARA FROM JANUARY TO JUNE, 1918.

EXPORTERS.	NEW YORK. Fine.	Medium.	Coarse.	Caucho.	Totals.	EUROPE. Fine.	Medium.	Coarse.	Caucho.	Totals.	Grand Totals.
Stowell & Co.....*kilos*	530,912	140,528	439,199	412,065	1,522,704	294,627	35,880	34,229	.....	364,736	1,887,440
General Rubber Co. of Brazil	306,672	27,774	148,979	368,122	851,547	125,071	12,528	6,712	.....	144,311	995,858
Saurez, Filho & Co.	313,420	.....	56,195	210,037	579,652	346,089	.....	.....	.....	346,089	925,741
Banco do Brazil	.....	.....	.....	.....	.....	807,414	.....	.....	.....	807,414	807,414
J. Marques	293,415	38,021	177,220	49,538	588,194	48,250	.....	9,570	.....	57,820	646,014
Pires Teixeira & Co.	267,383	17,073	145,839	51,516	581,811	43,428	3,957	1,132	.....	48,517	630,328
G. Fradelizi & Co.	104,574	4,447	101,617	81,031	291,669	145,991	8,462	541	.....	154,994	446,663
Chamié & Co.	156,064	21,886	61,110	126,750	365,810	.....	.....	.....	.....	.....	365,810
Bitar Irmãos	29,440	10,880	.....	135,520	175,840	4,320	320	780	14,080	19,500	195,340
Adelbert H. Alden, Limited	137,112	14,313	9,446	.....	160,871	.....	.....	.....	.....	.....	160,871
Sundries	151,366	5,409	84,970	235,850	477,595	29 584	909	2,118	7,773	40,484	518,079
Totals	2,290,358	280,331	1,224,575	1,800,429	5,595,693	1,84-,874	62,056	55,082	21,853	1,983,865	7,579,558
From Manaos	1,356,857	175,053	577,956	1,199,292	3,309,158	1,065,452	128,308	33,000	2,042	1,228,802	4,537,960
From Iquitos	381,929	12,485	80,568	70,908	545,890	294,693	20,820	43,965	91,960	451,438	997,328
	4,029,144	467,869	1,883,099	3,070,629	9,450,741	3,205,019	211,184	132,047	115,855	3,664,105	13,114,846

(*Compiled by Stowell & Co. Manáos.*)

CUSTOM HOUSE STATISTICS.

PORT OF BOSTON, MASS.—JUNE, 1918.

IMPORTS:	POUNDS.	VALUE.
India rubber	168,077	$61,961
Rubber scrap	19,684	427
Manufactures of india rubber	.....	2,118
Total	.....	$64,506

PORT OF CHICAGO, ILLINOIS—JUNE, 1918.

IMPORTS:	POUNDS.	VALUE.
Rubber Scrap	50	$5

PORT OF CLEVELAND, OHIO—JUNE, 1918.

IMPORTS:	POUNDS.	VALUE.
India rubber	622,395	$253,719
Rubber Scrap	47,007	2,818
Totals	669,402	$256,537

PORT OF NEW ORLEANS, LA.—JUNE, 1918.

IMPORTS:	POUNDS.	VALUE.
None	.....	.....

PORT OF SAN FRANCISCO, CAL.—JUNE, 1918.

IMPORTS:	POUNDS.	VALUE.
India rubber	8,807,169	$4,427,948
Jelutong	101,170	3,564
Rubber scrap	35,840	1,241
Manufactures of india rubber,	.....	21
Total	.....	$4,432,774

EXPORTS:	POUNDS.	VALUE.
Rubber boots—*pairs*	336	$1,796
Rubber shoes—*pairs*	7,940	6,410
Automobile tires	.....	533,003
Other tires	.....	8,818
Belting, hose, etc	.....	75,511
Druggists' sundries	.....	3,654
All other manufactures of india rubber	.....	43,294
Total	.....	$472,486

PORTS OF SEATTLE AND TACOMA, WASH.—JUNE, 1918.

IMPORTS:	POUNDS.	VALUE.
India rubber	10,196,391	$4,669,233
Manufactures of india rubber,	.....	499
Total	.....	$4,669,732

EXPORTS:	POUNDS.	VALUE.
Rubber boots—*pairs*	80	$322
Rubber shoes—*pairs*	3,675	2,261
Automobile tires	.....	123,212
Other tires	.....	173
Belting, hose, etc	.....	26,500
Druggists' sundries	.....	335
All other manufactures of india rubber	.....	6,519
Total	.....	$159,322

PORT OF DISTRICT OF MASSACHUSETTS—MAY, 1918.

EXPORTS:	POUNDS.	VALUE.
Belting:		
To—		
Canada	.....	$520
Newfoundland	.....	406
Total	.....	$926
Rubber boots—*pairs*:		
To—		
Canada	1,392	$4,874
Newfoundland	4,257	17,202
Totals	5,649	$22,076
Rubber shoes—*pairs*:		
To—		
Canada	2,016	$982
Cuba	12,697	12,004
Totals	14,713	$12,986
Druggists' sundries:		
To—		
Canada	.....	$138
Newfoundland	.....	22
Cuba	.....	4,773
Total	.....	$4,933
Automobile tires:		
To—		
Canada	.....	$113
Other manufacturers of india rubber:		
To—		
France	.....	$3,439
England	.....	22,356
Canada	.....	749
Newfoundland	.....	193
Cuba	.....	5,631
Total	.....	$32,368

PORT OF THE DISTRICT OF MASSACHUSETTS.—JUNE, 1918.

EXPORTS:	POUNDS.	VALUE.
Belting:		
To—		
Miquelon	.....	$9
Rubber boots—*pairs*:		
To—		
England	1,018	$3,403
Canada	223	825
Miquelon	348	1,044
Newfoundland	64	230
Totals	1,653	5,502
Rubber shoes—*pairs*:		
To—		
Canada	441	$995
Newfoundland	7,796	9,125
Cuba	2,034	2,290
Total	10,271	$12,410
Druggists' sundries:		
To—		
Canada	.....	$40
Newfoundland	.....	102
Cuba	.....	1,164
Total	.....	$1,306
Automobile tires:		
To—		
Canada	.....	$24
Other tires:		
To—		
Canada	.....	$8
Other manufactures of india rubber:		
To—		
France	.....	$1,384
Canada	.....	366
Miquelon	.....	16
Newfoundland	.....	147
Cuba	.....	2,503
Total	.....	$4,416

PORT OF THE DISTRICT OF MICHIGAN.—JUNE, 1918.

IMPORTS:	POUNDS.	VALUE.
Rubber scrap	17,920	$582
Manufactures of india rubber,	.....	60
Total	.....	$642

EXPORTS:	POUNDS.	VALUE.
Rubber scrap	52,034	$6,033
Reclaimed rubber	1,241	121
Rubber boots—*pairs*	4,389	10,795
Automobile tires	.....	93,033
Other tires	.....	223
Belting, hose, etc	.....	4,356
Druggists' sundries	.....	5,720
All other manufactures of india rubber	.....	14,518
Total	.....	$134,799

RUBBER STATISTICS FOR THE UNITED STATES.

IMPORTS OF CRUDE AND MANUFACTURED RUBBER.

	May, 1918.	
UNMANUFACTURED—*free*:	POUNDS.	VALUE.
India rubber:		
From—		
Portugal	128,770	$51,357
United Kingdom	3,651,519	2,242,500
Central America	76,813	26,533
Mexico	332,923	157,434
Brazil	4,220,003	1,394,066
Peru	592,565	236,179
Other South America	321,500	143,048
British East Indies	34,541,168	16,171,456
Dutch East Indies	4,917,229	2,348,769
Other countries	425,046	245,983
Totals	49,207,536	$23,017,325
Balata	246,395	$125,313
Guavule	47,950	8,631
Jelutong	991,687	56,130
Gutta percha	100,800	16,238
Totals	50,594,368	$23,223,637
Rubber scrap	700,214	$53,849
Totals, unmanufactured	51,294,582	$23,277,486
Chicle ..... *dutiable*	554,235	$318,921
MANUFACTURED—*dutiable*:		
India rubber and gutta percha	.....	$18,830
India rubber substitutes	.....	10,158

EXPORTS OF DOMESTIC MERCHANDISE.

	May, 1918.	
MANUFACTURED—	POUNDS.	VALUE.
Automobile tires:		
To—		
France	.....	$101,630
United Kingdom	.....	54,623
Canada	.....	171,457
Mexico	.....	106,559
Cuba	.....	169,527
Argentina	.....	93,041
Brazil	.....	80,886
British India	.....	61,123
Australia	.....	177,752
New Zealand	.....	72,912
Philippine Islands	.....	103,564
British South Africa	.....	2,814
Other countries	.....	268,903
Total	.....	$1,464,791
All other tires	.....	$66,658
Scrap and old rubber	320,142	28,455
Reclaimed rubber	184,172	30,283
Belting, hose and packing	.....	495,451
Rubber boots.....*pairs*	11,042	37,658
Rubber shoes.....*pairs*	69,835	63,781
Druggists' sundries	.....	72,991
All other manufactures of india rubber	.....	561,656
Total	.....	$2,821,724
Fountain pens.....*number*	12,547	$9,001

EXPORTS OF FOREIGN MERCHANDISE.

	May, 1918.	
UNMANUFACTURED—	POUNDS.	VALUE.
Balata	40,477	$24,788
India rubber	901,931	470,184
Totals, unmanufactured	942,408	$494,972
Chicle	28,418	$14,222
MANUFACTURED—		
India rubber	.....	$2,061

EXPORTS OF RUBBER GOODS TO NON-CONTIGUOUS TERRITORIES OF THE UNITED STATES.

	May, 1918.	
MANUFACTURED—	QUANTITY.	VALUE.
To—		
Alaska:		
Belting, hose and packing	.....	$11,653
Boots and shoes.....*pairs*	8,847	24,365
Other rubber goods	.....	3,485
Total	.....	$39,503
To—		
Hawaii:		
Belting, hose and packing	.....	$6,833
Automobile tires	.....	128,803
Other tires	.....	5,009
Other rubber goods	.....	18,358
Total	.....	$159,003
To—		
Philippine Islands:		
Belting, hose and packing	.....	$18,932
Boots and shoes.....*pairs*	2,480	2,777
Tires	.....	115,325
Other rubber goods	.....	29,178
Total	.....	$166,212
To—		
Porto Rico:		
Belting, hose and packing	.....	$2,343
Automobile tires	.....	90,497
Other tires	.....	1,394
Other rubber goods	.....	10,371
Total	.....	$104,605

STATISTICS OF CRUDE AND MANUFACTURED RUBBER AT THE PORT OF NEW YORK.

IMPORTS.

	June, 1918.	
MANUFACTURED—*free*:	POUNDS.	VALUE.
Crude rubber:		
From—		
Portugal	230,447	$73,770
England	1,521,740	824,645
Costa Rica	246	47
Honduras	770	193
Nicaragua	11,109	3,249
Panama	10,865	4,376
Mexico	182,109	67,071
Brazil	4,826,422	1,684,585

MANUFACTURED—*free:*	June, 1918. Pounds.	Value.
Colombia	43,643	17,602
Dutch Guiana	593	473
Venezuela	11,450	7,890
British India	111,955	59,178
Straits Settlements	4,643,302	1,879,389
Other British East Indies	1,399,657	636,433
Dutch East Indies	370,679	164,779
Totals	13,364,987	$5,423,680
Gutta jelutong:		
From—		
Straits Settlements	308,776	$25,839
Balata:		
From—		
Venezuela	35,800	$20,038
British Guiana	12,058	9,200
Ecuador	2,000	920
Colombia	11,555	4,428
Panama	41,270	19,550
Totals	102,683	$54,136
Rubber scrap:		
From—		
France	149,230	$19,210
England	335,377	24,229
Panama	5,243	215
Cuba	25,260	1,377
Totals	515,110	$45,031
Totals, unmanufactured	14,291,556	$5,548,686
MANUFACTURED—*dutiable:*		
India rubber:		
From—		
France		$153
England		25,482
Canada		26,728
Japan		2,148
Total		$54,511
India rubber substitutes:		
From—		
Straits Settlements		$24,074

EXPORTS OF DOMESTIC MERCHANDISE.

MANUFACTURED—	June, 1918. Pounds.	Value.
Automobile tires:		
To—		
France		$8,996
England		18,512
Honduras		2,994
Nicaragua		73
Panama		9,717
Mexico		20,586
Jamaica		22,327
Trinidad		4,865
British South Africa		72,529
Cuba		90,459
Dominican Republic		9,582
Argentina		211,082
Bolivia		3,330
Brazil		88,480
Chile		105,309
Colombia		5,185
Ecuador		5,918
Peru		8,832
Uruguay		56,953
Venezuela		11,054
British India		12,074
British East Indies		15,953
Australia		381
Other countries		17,770
Total		$802,961
All other tires		$272,116
Reclaimed rubber	149,011	34,792
Belting		215,746
Rubber boots.....*pairs*	7,470	35,167
Rubber shoes.....*pairs*	42,656	33,013
Druggists' sundries		56,241
Other rubber manufactures		272,116
Total		$1,722,152

EXPORTS OF FOREIGN MERCHANDISE.

UNMANUFACTURED—*free:*	June, 1918. Pounds.	Value.
India rubber	76,672	$48,191
MANUFACTURED—		
India rubber		$668

RUBBER STATISTICS FOR THE DOMINION OF CANADA.

The import and export figures by countries usually published in this table are withheld by the Canadian Government.

IMPORTS OF CRUDE AND MANUFACTURED RUBBER.

UNMANUFACTURED—*free:*	April, 1918. Pounds.	Value.
Rubber and gutta percha, crude caoutchouc or india rubber	1,630,376	$778,662
Rubber recovered	398,038	72,625
Hard rubber, in sheets and rods	3,334	2,601
Rubber substitute	117,312	19,471
Rubber powdered, and rubber or gutta percha waste	256,277	30,020
Rubber thread, not covered	3,031	4,423
Balata, crude	13	15
Chicle	459,994	208,955
MANUFACTURED—*dutiable:*		
Boots and shoes		$20,839
Belting		26,412
Waterproof clothing		16,751
Hose, lined with rubber		8,918
Mats and matting		173
Packing		7,866
Tires of rubber for vehicles of all kinds		126,123
Rubber cement and all manufactures of india rubber and gutta percha—n. o. p.		91,972
Hard rubber, unfinished, in tubes, for fountain pens		2,281
Fillets of cotton and rubber, not over seven inches wide, for card clothing		287
Webbing, over one inch wide		23,159

EXPORTS OF DOMESTIC AND FOREIGN RUBBER GOODS.

MANUFACTURED—	April, 1918. Produce of Canada. Value.	Reexports of Foreign Goods. Value.
Hose	$18,369	
Tires	103,629	$342
Boots and shoes	123,811	
Waste	2,305	
All other—n. o. p.	3,650	713
Chicle	123,505	

UNITED KINGDOM RUBBER STATISTICS.

The import and export figures by countries usually published in this table are withheld by the British Government.

IMPORTS.

UNMANUFACTURED—	June, 1918. Pounds.	£.
Crude rubber	4,541,500	534,312
Waste and reclaimed rubber	7,300	253
Gutta percha	316,736	56,299
Totals	4,865,536	590,864
MANUFACTURED—		
Apparel, waterproofed		6,487
Boots and shoes...*doz. pairs*	2,833	23,714
Insulated wire		55
Automobile tires and tubes		12,827
Total		43,083

EXPORTS OF DOMESTIC MERCHANDISE.

UNMANUFACTURED—	June, 1918. Pounds.	£.
Waste and reclaimed rubber	442,200	10,956
MANUFACTURED—		
Apparel, waterproofed		36,407
Boots and shoes...*doz. pairs*	7,705	11,540
Insulated wire		6,662
Automobile tires and tubes		107,082
Motorcycle tires and tubes		13,081
Cycle tires and tubes		31,826
Tires not specified		15,572
Other manufactures of india rubber		103,028
Total		325,198

EXPORTS—FOREIGN AND COLONIAL.

UNMANUFACTURED—	June, 1918. Pounds.	£.
Crude rubber	2,369,100	280,892
Waste and reclaimed rubber	22,400	600
Gutta percha	4,480	933
Totals	2,395,980	282,425
MANUFACTURED—		
Automobile tires and tubes		1,393
Motorcycle tires and tubes		326
Cycle tires and tubes		395
Tires not specified		522
Total		2,636

THE MARKET FOR COTTON AND OTHER FABRICS.

Copyright, 1918.

NEW YORK.

THE American cotton market has shown remarkable strength during August as the result of favorable war news and weather conditions inimical to crop development. Middling spot cotton was 29.70 cents on August 1, and continued to advance with minor fluctuations until August 28, when a new high record of 37.30 cents was made in anticipation of an unfavorable government crop report on September 3. If this should show a 60 per cent condition, the crop indicated would be 11,500,000 to 12,000,000 bales.

There were 6,591,336 bales consumed during the 12 months ended July 31, 1918, compared with 6,788,505 bales for the same period in 1917.

EGYPTIAN COTTON.—From recent cables it is learned that the total area planted in Egyptian cotton is 1,315,000 feddans, of which 21 per cent is Upper, 6 per cent Brown, 72 per cent Sakel and 1 per cent Abassi. The crop condition in Lower Egypt is 98 per cent normal and in Upper Egypt 101 per cent, indicating a good yield that is estimated at 5,000,000 cantars.

Respecting the local market, it is reported that 20,000 to 30,000 bales of Sakellarides are in transit, and the considerable quantity of Brown Egyptian, bought before the embargo went into effect, will doubtless be shipped, so that the outlook for supplies is improving. But should the Government decide to curtail the production of tires for a prolonged period, a large volume of cotton will be diverted from tire fabrics to other commodities without disturbing the market, as Egyptians are in extensive demand. The established price for Sakel is 50 cents Alexandria, or about 60 cents here.

SEA ISLAND COTTON.—This commodity will cease to be a factor in rubber materials, due to advancing prices, and result in the general substitution of Egyptian, not only in tire fabrics but in gas-mask fabrics.

ARIZONA COTTON.—This year's production will approximate 40,000 bales, of which the Goodyear interests will produce 20,000 bales of long-staple cotton.

DUCKS, DRILLS, SHEETINGS, AND OSNABURGS.—These are all practically withdrawn from the market and the mills sold up to the end of the year. On August 15, differential prices were fixed by the Government, good until October 1, for any delivery, net 10 days at the mill. Civilian business is at a standstill.

TIRE FABRICS.—The Government order to reduce tire production during August and September was promptly reflected in this market. Tire manufacturers will hardly evince much interest in tire fabrics until September 30, the end of the period, when government regulations covering the next period will be published.

NEW YORK QUOTATIONS.

August 26, 1918.

Prices subject to change without notice.

AIRPLANE AND BALLOON FABRICS:			
Wamsutta, S. A. I. L. No. 1, 40-inch	*yard*	*$0.60	@
No. 4, 38½-inch		*.50	@
for gas masks		*.45	@
ASBESTOS CLOTH:			
Brake lining, 2½ lbs. sq. yd., brass or copper insertion	*lb.*	.80	@
2¼ lbs. sq. yd., brass or copper insertion	*lb.*	.85	@
BURLAPS:			
32— 7-ounce	*100 yards*	17.15	@
40— 7½-ounce		18.35	@
40— 8-ounce		18.60	@
40—10-ounce		23.75	@
40—10½-ounce		24.00	@
45— 7½-ounce		21.75	@
45— 8-ounce		22.00	@
45— 9½-ounce		27.75	@
48—10-ounce		35.00	@

TIRE
FABRICS

JENCKES
SPINNING
COMPANY

PAWTUCKET
RHODE ISLAND

DRILLS:			
38-inch 2.00-yard	*yard*	.30½	@
40-inch 2.47-yard		.25⅜	@
52-inch 1.90-yard		.32½	@
52-inch 1.95-yard		.32¼	@
60-inch 1.52-yard		*.58	@
DUCK:			
CARRIAGE CLOTH:			
38-inch 2.00-yard enameling duck	*yard*	.31	@
38-inch 1.74-yard		*.35	@
72-inch 16.66-ounce		*.64	@
72-inch 17-21-ounce		*69⅛	@
MECHANICAL:			
Hose	*pound*	.58	@
40-inch, 10-ounce		.59	@
Belting		.58	@
HOLLANDS, 40-INCH:			
Acme	*yard*	.30	@
Endurance	*yard*	.34	@
Penn	*yard*	.35	@
OSNABURGS:			
40-inch 2.35-yard	*yard*	.25⅝	@ .26⅛
40-inch 2.48-yard		.24¼	@ .25¼
37½-inch 2.42-yard		.24¾	@ .26
RAINCOAT FABRICS:			
COTTON:			
Bombazine 64 x 60 water repellent	*yard*	*.23	@
60 x 48 not water repellent		*.20½	@
Cashmeres, cotton and wool, 36-inch		.70	@
Twills 64 x 72		*.30	@ .32½
64 x 102		*.35	@ .37½
Twill, mercerized, 36-inch, tan and olive		.33½	@
blue and black		.34½	@
Tweed		*.45	@ .50
Tweed, printed		*.22	@
Plaids 60 x 48		*.21½	@
56 x 44		*.20½	@
Repp		*.25	@ .32
Surface prints 60 x 48		*.21½	@
64 x 60		*.23½	@
IMPORTED WOOLEN FABRICS SPECIALLY PREPARED FOR RUBBERIZING —PLAIN AND FANCIES:			
63-inch, 3¼ to 7½ ounces	*yard*	1.05	@ 2.90
36-inch, 2¾ to 5 ounces		.80	@ 1.80
IMPORTED PLAID LINING (UNION AND COTTON):			
63-inch, 2 to 4 ounces	*yard*	.90	@ 1.60
36-inch, 2 to 4 ounces		.52½	@ 1.05
DOMESTIC WORSTED FABRICS:			
36-inch, 4½ to 8 ounces	*yard*	.70	@ 1.70
DOMESTIC WOVEN PLAID LININGS (COTTON):			
36-inch, 3¾ to 5 ounces	*yard*	.24	@ .40
SHEETINGS:			
40-inch 2.35-yard	*yard*	*.28½	@
40-inch 2.50-yard		*.27½	@
40-inch 2.70-yard		*.24½	@
40-inch 2.85-yard		.21⅜	@
40-inch 3.15-yard		.22¾	@
40-inch 3.60-yard		.19½	@
JACKET:			
Delaware	*yard*	.28	@
Schuylkill	*yard*	.34	@
SILKS:			
Canton, 38-inch	*yard*	.35	@
Schappe, 36-inch		.57½	@
STOCKINETTES:			
COTTON, 52-INCH:			
D—14-ounce	*yard*	*.85	@ .90
E—11½-ounce		*.60	@ .65
F—14-ounce		*.85	@ .90
G— 8-ounce		*.75	@ .80
H—11-ounce		*.70	@ .85
I— 9-ounce		*.60	@ .65
Knitaback	*pound*	*1.75	@ 2.00
WOOL, 52-INCH:			
A—14-ounce	*yard*	*1.75	@
B—14-ounce		*2.25	@
C—14-ounce		*2.50	@
TIRE FABRICS:			
17¼-ounce Sea Island, combed	*square yard*	1.78	@
17¼-ounce Egyptian, combed		1.38	@
17¼-ounce Egyptian, carded		1.35	@
17¼-ounce Peelers, combed		1.27	@
17¼-ounce Peelers, carded		.97	@

*Nominal.

THE MARKET FOR RUBBER SCRAP.

Copyright, 1918.

NEW YORK.

THE rubber scrap market has been very quiet during the past month, with only an occasional light movement of odd lots to break the monotony of an otherwise lifeless market. Values on several grades have declined, but on the whole, prices are unchanged.

The curtailment of crude rubber imports was continued until September 30, when new regulations governing the future will be issued by the Government. That more reclaimed rubber will be used as the result of restricted rubber imports, is reasonable, and should ultimately benefit the market for rubber scrap.

BOOTS AND SHOES.—These have received scant consideration, with limited offerings from the mills at prices too low to be attractive to the dealers. Prices show a decline of ⅛-cent since last month's quotations.

INNER TUBES.—This material has been almost dead for the entire month, although more interest was shown during the last week. Prices on all grades are about ½-cent lower than last month.

MECHANICALS.—There appears to have been no call for this stock and prices have not changed.

TIRES.—Accumulations of stocks in dealers' hands are reported to be large and the movement of this material very small. Prices are nominal and unchanged, while certain dealers have withdrawn from the market.

STATISTICS.—The London and Liverpool imports of waste and reclaimed rubber for June were 6,700 pounds, value £243, compared with 3,400 pounds, value £340, for May. Exports for June were 22,400 pounds, value £600, compared with 772,600 pounds, value £13,396, for May.

NEW YORK QUOTATIONS FOR CARLOAD LOTS DELIVERED.

August 26, 1918.

Prices subject to change without notice.

BOOTS AND SHOES.				
Arctic tops	lb.	$0.01½	@	.01¾
Boots and shoes	lb.	.08⅛	@	.08½
Trimmed arctics	lb.	.07	@	.07¼
Untrimmed arctics	lb.	.06	@	.06⅛
HARD RUBBER.				
Battery jars, black compound	lb.	.02¼	@	
No. 1, bright fracture	lb.	.26	@	.27
INNER TUBES.				
No. 1, old packing	lb.	.22	@	.22½
new packing	lb.	.24	@	.24½
No. 2	lb.	.11¼	@	.11¾
Red	lb.	.11¼	@	.11⅜
MECHANICALS.				
Black scrap, mixed, No. 1	lb.	.05½	@	
No. 2	lb.	.04	@	
Car springs	lb.	.05	@	
Heels	lb.	.04	@	
Horse-shoe pads	lb.	.04	@	
Hose, air-brake	lb.	.05½	@	.05¾
fire, cotton lined	lb.	.02½	@	
garden	lb.	.02⅛	@	
Insulated wire stripping, free from fiber	lb.	.04½	@	
Matting	lb.	.01½	@	
Packing	lb.	.01½	@	
Red scrap, No. 1	lb.	.09¼	@	.10
No. 2	lb.	.06	@	.06½
White scrap, No. 1	lb.	.12	@	.12¼
No. 2	lb.	.09	@	
TIRES.				
Pneumatic—				
Auto peelings, No. 1	lb.	.10	@	
No. 2	lb.	.07¼	@	.07½
Bicycle	lb.	.04⅞	@	
Standard white auto	lb.	.05½	@	
Standard mixed auto	lb.	.05	@	.05¼
Stripped, unguaranteed	lb.	.04½	@	
White, G. & G.	lb.	.05¾	@	
M. & W. and U. S.	lb.	.05⅞	@	
Solid—				
Carriage	lb.	.05¾	@	
Irony	lb.	.02	@	
Truck	lb.	⅜&50	@	⅝&50

THE MARKET FOR CHEMICALS AND COMPOUNDING INGREDIENTS.

Copyright, 1918.

NEW YORK.

ALL base metal markets have been quiet but strong. The official price of 26 cents on copper is in effect until November 1. Tin continues dull and scarcer at nominal prices. Lead has been firm and practically unobtainable. Spelter was in demand and prices have advanced. Antimony continues dull and unchanged.

The market for rubber chemicals and ingredients was positively dull with inquiries far below the normal for this time of the year. This is doubtless the result of the unsettled feeling pervading the rubber manufacturing industry due to government regulations.

BARYTES, LITHOPHONE, AND ZINC OXIDE.—An advance is predicted in the price of these products early in September due to the high cost of labor. Barytes has already advanced in price—the others are unchanged.

CARBON TETRACHLORIDE.—Government requirements are absorbing large quantities of this material, leaving only a small amount for civilian use. Prices are now 32 to 40 cents.

DRY COLORS.—It has been a quiet month for dry colors and producers have therefore been able to meet delayed deliveries. Prices are unchanged.

WHITING AND CHALK.—The report that the Government anticipates arranging for an adequate supply of chalk from England is welcome news to the rubber trade.

NEW YORK QUOTATIONS.

AUGUST 26, 1918.

Subject to change without notice.

ACCELERATORS, ORGANIC.				
Accelerator N. C. C.	lb.	.50	@	
Accelerene	lb.	*$2.62	@	
Accelemal	lb.	*.80	@	
Accelemal No. 2	lb.	*.80	@	
Accellerator No. 1	lb.	*.60	@	
Aldehyde ammonia crystals	lb.	1.00	@	1.15
Aniline oil	lb.	.28	@	.29
Annex	lb.	.75	@	
Duplex	lb.	1.25	@	
Excellerex	lb.	*.85	@	
Hexamethylenexamine (Vitalin)	lb.	.60	@	
Hexamethylene tetramine (powdered)	lb.	1.05	@	1.20
Paraphenylenediamine	lb.	*3.00	@	
Tensilite	lb.	.65	@	
Thiocarbanilide	lb.	*.50	@	
Velocite	lb.	.55	@	
Vitaminex	lb.	.60	@	
ACCELERATORS, INORGANIC.				
Lead, dry red	lb.	.11¼	@	
sublimed blue	lb.	.09¼	@	
sublimed white	lb.	.09¼	@	
white, basic carbonate	lb.	.10	@	
white, basic sulphate	lb.	.09¼	@	.09¾
Lime, flour	lb.	.02	@	.02½
Litharge, domestic	lb.	.10¾	@	
English	lb.	.15	@	.16
sublimed	lb.	.11	@	
Magnesium, carbonate	lb.	.12	@	
calcined, heavy (Thistle brand)	lb.	.12	@	
light (Manhattan brand)	lb.	.45	@	
Magnesium oxide	lb.	.06½	@	
Magnesite, calcined, powdered	ton	65.00	@	
ACIDS.				
Acetic, 28 per cent (bbls.)	lb.	.19¾	@	
Glacial, 99 per cent (carboys)	lb.	.21½	@	
Cresylic, 97-99 per cent, straw color	gal.	*1.12	@	
95 per cent, dark	gal.	*1.02	@	
Muriatic, 20 degrees	lb.	.02¼	@	.02½
Nitric, 36 degrees	cwt.	7.35	@	
Sulphuric, 66 degrees	cwt.	2.15	@	
ALKALIES.				
Caustic soda, 76 per cent, ground	lb.	.09	@	
Soda ash, light, 58 per cent in bags	lb.	.04½	@	
COLORS.				
Black:				
Bone, powdered	lb.	.05	@	
granulated	lb.	.09	@	
Carbon, black (cases, factory)	lb.	.15	@	.25
Ivory black	lb.	.16	@	.30

Lampblack	lb.	.15	@	.45
Oil soluble aniline	lb.	*.75	@	1.50
Rubber black	lb.	.06	@	
Blue:				
Cobalt	lb.	*.25	@	.35
Prussian	lb.	1.35	@	1.50
Ultramarine	lb.	.18	@	.50
Brown:				
Iron oxide	lb.	.03	@	.04
Ochre, domestic	lb.	.04	@	.05
imported	lb.	.08	@	.09
Sienna, raw and burnt	lb.	.05	@	.08
Umber, raw and burnt	lb.	.05	@	.08
Green:				
Chrome tile	lb.	*.15	@	
Oxide of chromium (casks)	lb.	*.85	@	
India rubber	lb.	.75	@	
Red:				
Antimony, crimson, sulphuret of (casks)	lb.	.50	@	
crimson, "Mephisto" (casks)	lb.	.50	@	.55
Antimony, golden, sulphuret of	lb.	.25	@	
golden, "Mephisto" (casks)	lb.	.25	@	.30
golden, sulphuret, States brand, 16-17%	lb.	.28	@	
red sulphuret, States brand	lb.	.25	@	
vermilion sulphuret	lb.	.55	@	
Arsenic, red sulphide	lb.	.45	@	
Indian, pure bright	lb.	.08	@	.12
Iron oxide, reduced grades	lb.	.12	@	
pure bright	lb.	.16	@	
Oil soluble aniline, red	lb.	*2.50	@	3.00
orange	lb.	*2.00	@	
Oxymony	lb.	*.18	@	
Venetian	lb.	.02½	@	.06
Vermilion, English, pale, medium, dark	lb.	2.00	@	2.10
White:				
Lithopone, imported	lb.	*.07¾	@	.08
domestic	lb.	.07½	@	.07¾
Ponolith (carloads, factory)	lb.	.07½	@	
Rubber makers' white	lb.	.07½	@	.07¾
Zinc oxide, Horsehead (less carload, f. o. b. factory):				
"XX red"	lb.	*.10½	@	
"Special"	lb.	*.11	@	
French process, red seal	lb.	*.13¼	@	
green seal	lb.	*.13¾	@	
white seal	lb.	*.14¼	@	
(States brand)	lb.	.10¼	@	
Zinc sulphide, pure	lb.	None		
Yellow:				
Cadmium, tri-sulphate	lb.	*2.68	@	
sulphide	lb.	*2.00	@	
Chrome, light and medium	lb.	.28	@	.32
India rubber	lb.	*1.00	@	
Ochre, light or dark	lb.	.02¾	@	
Oil soluble aniline	lb.	*2.00	@	
Zinc chromate	lb.	*.50	@	

COMPOUNDING INGREDIENTS.

Aluminum flake (bbls. factory. Less 5% carload)	ton	27.00	@	
(sacks factory. Less 5% carloads)	ton	24.00	@	
Aluminum oxide	lb.	*.18	@	
Ammonia carbonate, powdered	lb.	.14	@	.14½
lumps	lb.	.12½	@	.13
Asbestine (bags)	ton	*22.50	@	25.00
Asbestos (bags)	ton	*25.00	@	35.00
Barium, carbonate, precipitated	ton	60.00	@	
sulphide, precipitated	lb.	.08½	@	
Barytes, pure white	ton	35.00	@	
off color	ton	25.00	@	
uniform floated (f. o. b. factory)	ton	35.00	@	37.00
Basofor	ton	110.00	@	
Blanc fixe	lb.	.05½	@	.06
Bone ash	lb.	.06	@	
Chalk, precipitated, extra light	lb.	.05	@	.05½
precipitated, heavy	lb.	.04	@	.04½
China clay, domestic	ton	15.00	@	22.00
Cotton linters, clean mill run, f. o. b. factory	bale	*4.67	@	
Fossil flour	ton	60.00	@	
Glue, high grade	lb.	.38	@	.50
medium	lb.	.25	@	.38
low grade	lb.	.15	@	.22
Graphite, flake (400 pound bbl.)	lb.	.10	@	.25
amorphous	lb.	.04	@	.08
Ground glass FF. (bbls.)	lb.	.03	@	
Infusorial earth, powdered	ton	60.00	@	
bolted	ton	65.00	@	
Mica, powdered	lb.	.03½	@	.06
Plaster of Paris	bbl.	2.00	@	3.00
Plastigum	lb.	.15	@	
Pumice stone, powdered (bbl.)	lb.	.05	@	
Rotten stone, powdered	lb.	.03½	@	
Rubber flux	lb.	.15	@	
Rubhide	lb.	*.38	@	
Silex (silica)	ton	20.00	@	36.00
Soapstone, powdered, domestic	ton	20.00	@	
imported	ton	None		
Starch, powdered corn (carload, bbls.)	cwt.	4.52	@	
(carload, bags)	cwt.	4.30	@	
Talc, American	ton	20.00	@	40.00
French	ton	*28.00	@	
Tripoli earth, powdered	ton	60.00	@	
bolted	ton	65.00	@	
Tyre-lith	ton	85.00	@	
Walpole rubber flux	lb.	*.06	@	
Whiting, Alba (carloads)	cwt.	.90	@	1.00
commercial	cwt.	1.25	@	1.30
gilders	cwt.	1.30	@	1.40
Paris, white, American	cwt.	1.50	@	1.75
English cliffstone	cwt.	1.75	@	2.00
Wood pulp XXX	ton	*40.00	@	45.00

MINERAL RUBBER.

Gilsonite	ton	55.00	@	
Genasco (carloads factory)	ton	55.00	@	57.00
M. R.	ton	65.00	@	
M. R. X.	ton	100.00	@	
Liquid rubber	lb.	.14	@	.15
Pioneer, carload, delivered	ton	*50.00	@	
less carload, factory	ton	*50.00	@	
Richmond Brand	ton	75.00	@	
No. 64 Brand	ton	65.00	@	
Refined Elaterite	lb.	.08¾	@	
Raven M. R.	lb.	.02½	@	.04

OILS.

Corn, crude	lb.	.18½	@	
refined	lb.	.22	@	
refined Argo (carloads)	cwt.	*21.47	@	
Glycerine (C. P. drums)	lb.	.61	@	.62
Glycerole	lb.	.12½	@	
Linseed, raw (carloads)	gal.	1.90	@	
Linseed compound	gal.	1.00	@	
Palm	lb.	*.18	@	
Paraffin	gal.	*.27	@	
Petrolatum	lb.	.08½	@	
Petroleum grease	lb.	.06	@	
Pine, steam distilled	gal.	*.55	@	
Pine tar	gal.	*.35	@	
Rapeseed, refined	gal.	1.80	@	
blown	lb.	.26	@	
Rosin	gal.	.63	@	.69
Soya bean, crude	lb.	.19	@	
Tar (casks)	gal.	*.34	@	.36

SOLVENTS.

Acetone (drums)	lb.	.25½	@	.25¾
substitute (drums)	gal.	2.00	@	
Benzol, 90 per cent	gal.	.25	@	.30
Beta-naphthol, resublimed	lb.	1.25	@	
ordinary grade	lb.	.75	@	
Halowax oil No. 1000 (f. o. b. Wyandotte)	lb.	.30	@	
No. 1001 (f. o. b. Wyandotte)	lb.	.35	@	
Naphtha, motor gasoline (steel bbls.)	gal.	.24½	@	
73 @ 76 degrees (steel bbls.)	gal.	None		
68 @ 70 degrees (steel bbls.)	gal.	None		
V. M. & P. (steel bbls.)	gal.	.45	@	.55
Toluol, pure	gal.	.30	@	.35
Turpentine, spirits	gal.	.23½	@	
wood	gal.	1.50	@	1.55
Venice	lb.	.65	@	.66
Osmano reducer	gal.	.57	@	
Zylol, pure	gal.	.45	@	.55
commercial	gal.	.30	@	

SUBSTITUTES.

Black	lb.	.11	@	.18
White	lb.	.13	@	.25
Brown	lb.	.18	@	.24
Brown factice	lb.	.10	@	.23
White factice	lb.	.14	@	.25
Cordex	lb.	.45	@	
Energine	lb.	.30	@	
Paragol soft and medium (carloads)	cwt.	17.08	@	
hard	cwt.	16.58	@	
Toughenite	lb.	.40	@	

VULCANIZING INGREDIENTS.

Carbon, bisulphide (drums)	lb.	.09	@	.10
tetrachloride (drum)	lb.	.40	@	
Lead, black hyposulphite (Black Hypo)	lb.	None		
Orange mineral, domestic	lb.	.14½	@	
Sulphur chloride (drums)	lb.	*.07½	@	.08
Sulphur, flour (carloads)	cwt.	3.90	@	
pure soft (carloads)	cwt.	3.95	@	

(See also Colors—Antimony)

RESINS AND PITCHES.

Cantella gum	lb.	.65	@	
Pine tar, retort	gal.	*.28	@	
kiln	gal.	*.25	@	
Pitch, Burgundy	lb.	*.07	@	
coal tar	lb.	*.01¼	@	
pine tar	lb.	*.02½	@	
ponto	lb.	*.12	@	
Resin, Pontianak, refined	lb.	None		
granulated	lb.	None		
fused	lb.	None		
Rosin, K	lb.	*.04¼	@	
Shellac, fine orange	lb.	*.78	@	.82
Tar, kiln	bbl.	*13.00	@	

WAXES.

Wax, beeswax, white	lb.	.63	@	.65
ceresin, white	lb.	.18	@	.19
carnauba	lb.	*.70	@	.93
ozokerite, black	lb.	*.60	@	
green	lb.	*.78	@	.80
montan	lb.	*.40	@	
substitute	lb.	*.23	@	.25
paraffin, crude 118/120 m. p. (cases)	lb.	.12½	@	
123/125 m. p. (cases)	lb.	.13	@	
refined 128/130 m. p. (cases)	lb.	.14	@	
133/136 m. p. (cases)	lb.	.15½	@	.15¾

*Nominal.

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TABLE OF CONTENTS.

Editorials: Pages.
- **More Reclaimed Rubber?** 701-702
- **In Behalf of the Little Fellow** 702
- **Non-Essential Rubber Goods** 702
- **Minor Editorials** 702

Pneumatic Tire Production Curtailed ..... Illustrated 703-713

The Rubber Association of America, Inc 713

War Service Committee of the Rubber Industry of the U. S. A 714

Rainbow Division, Special Liberty Loan Rubber Trade Committee for Fourth Liberty Loan 714-715

War News of the Rubber Industry ..... Illustrated 716-719

Report of the Tire and Rim Division of the S. A. E.—II. Illustrated 720-721

The Manufacture of Pump Valves 721

A. F. Osterloh ..... Portrait and Sketch 721

Chemistry:
- What the Rubber Chemists Are Doing. Illustrated 722-723
- Chemical Patents 723

Machines and Appliances, New ..... Illustrated 724-725
- C-H Battery-Charging Equipment. Machine for Applying Split Rivets to Treads. The Dwight CO_2 Indicator. "Giant" Rubber Scrap Cutters.

Machinery Patents ..... Illustrated 725
- Device for Open Steam Pressure Cure of Rubber Footwear. Other Machinery Patents.

Process Patents 725

Miscellaneous Patents ..... Illustrated 726
- A French Non-Skid Tire.

Rubber Belting and Steam Hose Tests ..... Illustrated 726

New Goods and Specialties ..... Illustrated 727-728
- More Camp Comforts. The "Non-Skid" Rubber Heel. "Baby's Delight" Nurser. The Bens "Fun and Health Producer." A Heel of Leather and Rubber. Fusilage Wire-Protector of Rubber. A Massage Brush for the Soldier. French Novelties in Rubber Heels and Soles. A Drinking Cup That Folds Flat. Tobacco Wringer. Device to Prevent End-Skidding.

Editor's Book Table 729
- "Collection Tariff." "Rubber: Its Production, Chemistry and Synthesis in the Light of Recent Research." "Van Nostrand's Chemical Annual"—Fourth Issue. "Rutherford's Planters' Notebook"—Seventh Edition. "Standardization of the Saybolt Universal Viscosimeter." "Principles and Practice of Cost Accounting."

New Trade Publications 729

Obituary Record 730
- Miss A. M. G. McGrory (Portrait). D. O. Pohlman.

Army and Navy Awards 730

Judicial and Customs Appraiser's Decisions 730-731

Inquiries and Trade Opportunities 731

National Association of Waste Material Dealers' Classification for Scrap Rubber 732

American Rubber Trade—News Notes and Personals Illustrated 733-737
- Dividends 733
- A. B. Jones ..... Portrait and Sketch 736
- Roger S. Hardy ..... Portrait and Sketch 737

Canadian Notes ..... Illustrated 735

Domestic Correspondence:
- Akron ..... By Our Correspondent—Illustrated 738-739
- Boston ..... By Our Correspondent 739-740
- Rhode Island ..... By Our Correspondent 740
- Trenton ..... By Our Correspondent 740-741

New Incorporations 741

Foreign Rubber News:
- Great Britain ..... By Our Correspondent 742-743
- Japan 743-744

Planting:
- Miscellaneous Notes ..... Illustrated 744-745
- Netherlands East Indies ..... By Our Correspondent 745

Patents Relating to Rubber 746-747
- United States. United Kingdom. Canada. France. New Zealand.

Trade Marks 747-748
- United States. United Kingdom. Canada. New Zealand.

Designs ..... Illustrated 748

Markets:
- Crude Rubber 749
- Highest and Lowest Prices 750
- Singapore Rubber Auctions 750
- Reclaimed Rubber 749
- Cotton and Other Fabrics 758-759
- Rubber Scrap 760
- Chemicals and Ingredients 760-761

Statistics:
- Brazil, Para Rubber Exports from January to June, 1918 756
- Manaos Rubber Exports During May, 1918 750
- Canada Rubber Statistics for April, 1918 758
- Ceylon Rubber Statistics 750
- United Kingdom Statistics for June, 1918 758
- United States:
  - Custom House Statistics 757
  - New York Arrivals of Crude Rubber 750
  - Statistics for June, 1918 757-758
  - San Francisco Arrivals of Crude Rubber 750-751
  - Seattle and Tacoma Arrivals of Crude Rubber 751
  - Statistics for May, 1918 757
  - Fiscal Year Ended June 30, 1917 752-756